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SEPTEMBER 27, 2004 • VOL. 38 • NO. 39 • $5/COPY

Woolworths Deploys .Net App in J2EE

Uses Mainsoft tool to mask lack of Java skills

BY CAROL SLIWA

Before the start of the upcoming holiday season, Woolworths Holdings Ltd. wanted to improve the capabilities of the Java-based data-monitoring and alerting system it had hired an outside contractor to build. But the Cape Town-based retailer had a problem.

The company didn't want to spend more money contracting Java developers, who are hard to find and expensive to hire in South Africa, according to Marius Roets, system manager of integration solutions at Woolworths. And the retailer's own developers were skilled in Microsoft Corp.'s development tools, not Java 2 Enterprise Edition technology.

So Roets turned to a new tool from Mainsoft Corp. that promised to allow the developers to work in their familiar Visual Studio .Net environment yet deploy the application oo Woolworths' J2EE application and enterprise portal server software from Sybase Inc.

Woolworths, page 16

E-biz Sites Hit With Targeted Attacks, Extortion Threats

Hackers are shifting strategy, taking aim at specific companies

BY JAIKUMAR VIJAYAN

A distributed denial-of-service attack that disrupted Web-based systems at credit card payment processing firm Authorize.Net Corp. last week is indicative of a sharp increase in the number of cyberattacks being targeted at specific companies and driven by profit motives.

The DDoS attack against Authorize.Net coincided with the release of a report by IT security software vendor Symantec Corp., which said its analysis of network attacks in the first six months of this year shows that malicious hackers appear to be moving away from mass attacks to more focused ones aimed at e-commerce sites.

Other security vendors and analysts painted a similar picture.

"We're seeing a big escalation of attacks targeted at e-commerce companies," said

Attacks, page 61

MORE INSIDE

UK police arrest a 20-year-old ... in connection with the theft of ... from Cisco Systems

CA Tries to Avoid Fallout After Kumar's Indictment

Users remain in company's camp as it signs deal with DOJ; former CEO pleads not guilty

BY MATT HAMBLEN

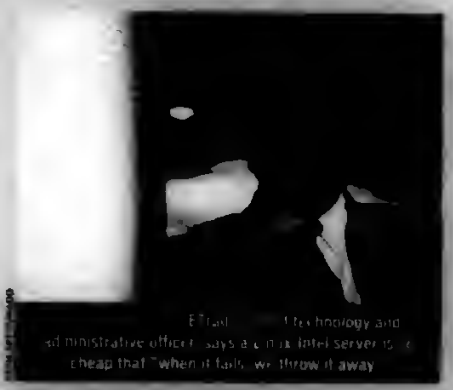
ONLINE

Last week's federal grand jury indictment of former Computer Associates International Inc. CEO Sanjay Kumar for allegedly orchestrating widespread accounting fraud at CA left some users concerned but undeterred about continuing to use the company's software.

"Obviously, we'll watch what happens, but I don't feel the indictments and related news will have any effect on our use of CA software or our confidence about the vendor," said Alain Paquette, manager of distributed servers at Bombardier Aerospace in Dorval, Quebec. The aerospace division of Bombardier Inc. uses a variety of desktop, network and server management tools from CA, as well as its help desk software.

Kumar's indictment was announced on the same day that CA agreed to pay $225 million to reimburse shareholders for the alleged fraud and to work with the government to help recoup compensation from accused former executives. In return, the U.S. Department of Justice said it won't prosecute CA as long as the company abides by the terms of the cooperation

Kumar, page 16



In a fierce battle with other online stock brokerages, ETrade guarantees to execute trades in two seconds or less. Gary H. Anthes reports on the open-source systems, and the obsession with speed, that make it possible. **Page 27**

ETRADE
Beats the Clock

NEWSPAPER

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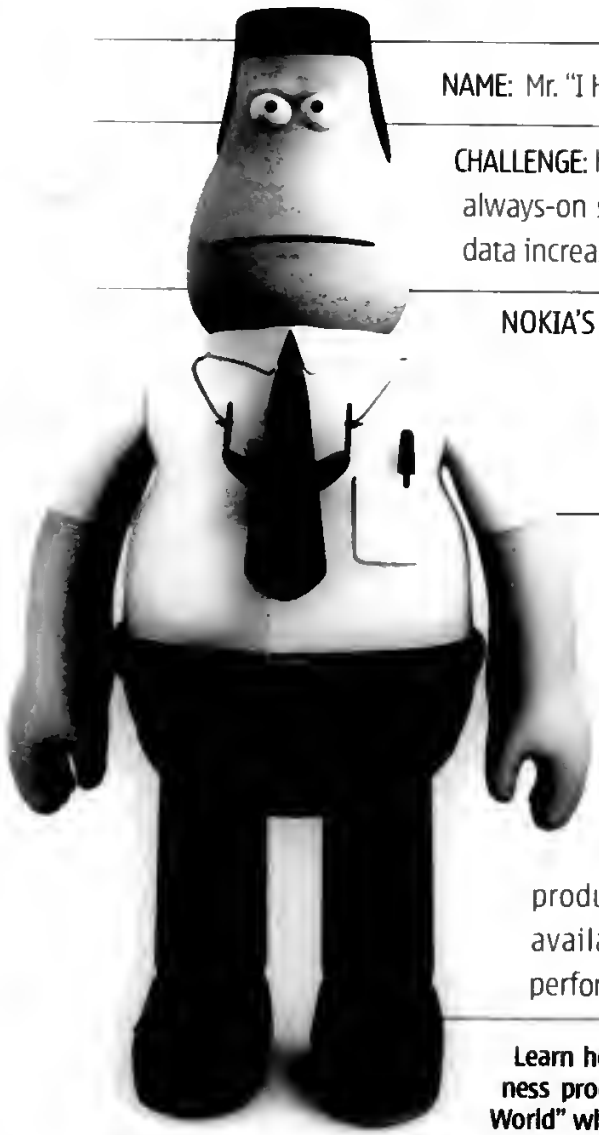

NAME: Mr. "I Have Security Issues" | **QUOTE:** "Is it safe?"

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Putting Out Fires

In the Management section: A complex web of special IT systems helps the National Interagency Fire Center position front-line crews and resources before a forest fire breaks out **Page 41**

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61 **BearingPoint wins** a $229 million contract to consolidate and integrate the Department of Homeland Security's financial systems.

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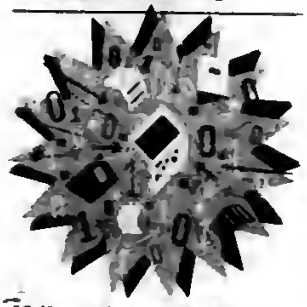

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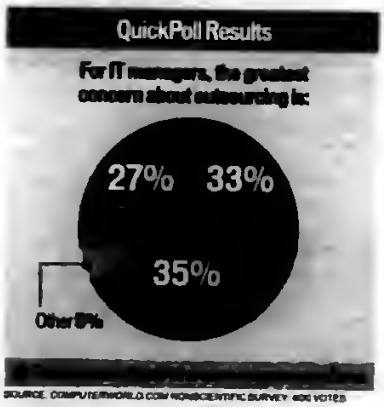

Infosecurity Career Basics

SECURITY: Aspiring information security experts first need mainstream experience and credibility if they want to be effective in their field, writes columnist Peter H. Gregory. QuickLink 49296

New Approach to Applications

DEVELOPMENT: Consultant Jonathan Sapir sees a shift in the way we build software, to an emphasis on meeting the demands of a changing, dynamic business environment. QuickLink 49606

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AT DEADLINE

Fiorina Dismisses IT Spending Jump

Speaking at an investment conference in San Francisco, Hewlett-Packard Co. CEO Carly Fiorina dismissed the idea that corporate budget surpluses will drive an increase in IT spending in this year's fourth quarter. Fiorina added that IT buyers have become more discriminating about purchasing and now realize that spending on new technology can sometimes be "a bad thing."

Oracle Extends PeopleSoft Offer

Oracle Corp. again extended its $7.7 billion hostile takeover bid for PeopleSoft Inc., saying that shareholders now have until Oct. 6 to accept its purchase offer. The all-cash offer was due to expire last Friday. Oracle said that about 6.5% of PeopleSoft's shares had been tendered as of Friday, down from 7.2% two weeks earlier, when a federal judge ruled that Oracle could proceed with its bid. (See related story at right.)

Bankruptcy Nears For Commerce One

Commerce One Inc. laid off 56 of its remaining 92 workers and said it expects to file for bankruptcy protection. The San Francisco-based company added that it was down to its last $300,000 in operating funds and that attempts to find new financing have been unsuccessful. Commerce One was one of the business-to-business software vendors that were waylaid by the dot-com collapse.

Short Takes

SAS INSTITUTE INC. today plans to announce an automated forecasting tool built on top of its SAS 9 business intelligence software. . . . The LOS ALAMOS NATIONAL LABORATORY fired four workers for their roles in recent security incidents, including the disappearance of two computer disks.

PeopleSoft Seeks Sales Boost Via Upgrade Deals

Offers apps users free IT services, $100,000 credits

BY MARC L. SONGINI
SAN FRANCISCO

PEOPLESOFT INC. is offering users of its applications a series of sweeteners to entice them to upgrade their systems, a strategy designed to help the embattled vendor close more sales and boost its ability to fight off Oracle Corp.'s takeover bid.

Dubbed PeopleSoft Now, the upgrade initiative was one of the new offerings that PeopleSoft announced at its Connect 2004 user conference here last week.

The company also detailed an expanded sales and development partnership with IBM. Under that agreement PeopleSoft will optimize its applications for use with IBM's WebSphere middleware and development tools and resell the IBM technology.

The Now program, offered through PeopleSoft's Global Services arm, will provide users with free upgrade work, application management services and access to online training. PeopleSoft also said it will give customers $100,000 credits on some new software purchases. The program applies to all three of its business application product lines and is due to expire Dec. 31.

David Scott, vice president of marketing and strategy at PeopleSoft Global Services, said Now is designed to help the company save money by reducing the need to maintain older versions of its applications. PeopleSoft also hopes to sell add-ons to users who decide to do upgrades, he added.

The upgrade offer will enable IT managers to exploit the ease-of-use features now being embedded in application releases as part of PeopleSoft's Total Ownership Experience initiative, Scott said. "Some of our reasons are selfish, and some are selfless," he noted.

Conference attendee Dominick Sabatino said he expects his company, the North Shore-Long Island Jewish Health System in Great Neck, N.Y., to take advantage of the upgrade offer. The health care provider runs PeopleSoft's supply chain, human resources and financial applications but is several versions behind on each one.

"We had planned to upgrade in 2005," said Sabatino, the health care system's assistant vice president of corporate human resources. "This gives us an incentive to get there sooner."

PeopleSoft Now

Users can get a free technical upgrade from PeopleSoft Global Services.

Application management services are provided at no cost for one quarter.

Five project team members can get free access to Web-based training courses and other educational materials for one year.

PeopleSoft will give users a $100,000 credit on qualifying purchases of new software licenses that exceed $200,000.

"Free is always good," said Todd Inlander, CIO at Fleetwood Enterprises Inc., a Riverside, Calif.-based maker of recreational vehicles that uses PeopleSoft EnterpriseOne software. Fleetwood plans to upgrade early next year from EnterpriseOne 7.3 to 8.10, which should provide improved usability features, Inlander said. But he added that the Now program will require due diligence before the company signs on.

The U.S. Navy might be interested in using Now to help fuel an upgrade of aging payroll applications and other software from PeopleSoft, said Capt. Valerie Carpenter, joint program manager for the Pentagon's Defense Integrated Military Human Resources System (DIMHRS) project [QuickLink 41815].

The payroll system is based on PeopleSoft Enterprise 8.3, and Carpenter said an upgrade to Version 8.8 would offer more stability and enable the system to be seamlessly integrated with DIMHRS, which is due to be rolled out across all branches of the military starting in 2006.

PeopleSoft fell short of its second-quarter revenue target, a result it blamed on the difficulty of closing deals amid the uncertainty created by Oracle's 15-month-old takeover bid. That uncertainty grew earlier this month when a federal judge rejected the U.S. Department of Justice's attempt to block Oracle on antitrust grounds. **49650**

Stacy Cowley of the IDG News Service contributed to this story.

MORE NEWS ONLINE

PeopleSoft's new deal with IBM is aimed at shoring up its middleware position.

QuickLink 49579
www.computerworld.com

PeopleSoft Not Perfect on J.D. Edwards Deal, CEO Says

SAN FRANCISCO

PeopleSoft CEO Craig Conway last week touted the hundreds of enhancements made in the past year to the World and EnterpriseOne applications that the company inherited when it bought J.D. Edwards & Co. But he also acknowledged that PeopleSoft's handling of the acquisition wasn't free of glitches.

During his keynote speech at Connect 2004, Conway said that PeopleSoft made well-intentioned errors while trying to implement some of its licensing and software enhancement policies with the J.D. Edwards user base. For example, he noted that some J.D. Edwards customers were erroneously convinced that they would be forced to abandon their named-user licenses in favor of PeopleSoft's revenue-based model and would end up paying more than they had previously.

Concerns about PeopleSoft's licensing policies were a major bone of contention among J.D. Edwards users who attended the independent Quest International User Group's global conference in June [QuickLink 47778].

The pricing issue hit home with Dave Hyzy, director of IT at Benderson Development Co., a Buffalo, N.Y.-based real estate developer that runs the World green-screen applications.

"I was definitely concerned about licensing when I heard about the new model," Hyzy said. He added that though it was unclear whether PeopleSoft originally intended to let both pricing models coexist or changed its tack after seeing the negative reactions, the company fixed the problem by letting customers choose either approach.

Conway also said that the sheer volume of new software functionality offered by PeopleSoft left some J.D. Edwards users baffled about what they were getting. Because there was a fear that PeopleSoft would do away with the J.D. Edwards applications, the company made an extra effort to boost development and unleashed "a flood of enhancements," he said. However, he added that PeopleSoft did prove its point about keeping the applications alive.

– Marc L. Songini

Sun Pushes Solaris 10 as Linux Alternative

Acknowledges that it 'dropped the ball' on low-cost servers

BY PATRICK THIBODEAU

For years, Sun Microsystems Inc. ignored Linux or dismissed it as just another Unix variant. But company officials are now talking bluntly about their failure to recognize the corporate IT push to low-cost commodity systems, which Linux has helped foster.

Sun "dropped the ball" while customers rushed to Linux/Intel computing, said John Loiacono, executive vice president of Sun's software group. But with its Solaris 10 upgrade due by year's end, Sun is hoping to change that perception by adding a list of new features and adopting an open-source model that's as good as or better than the models used for Apache, Mozilla Linux and others, Loiacono said.

Last week, Sun made a slew of announcements in hopes of luring users in the financial services industry back to its camp (see story at right). Moreover, the company is working with Advanced Micro Devices Inc. to build low-cost Opteron-based servers; a four-way box was released in the summer, and an eight-way system is expected next year.

Sticking With Solaris

Although Sun is supporting Red Hat Inc.'s version of Linux and Novell Inc.'s SUSE Linux, its preferred operating system is still Solaris. And some early users said they like the changes in Solaris 10.

Beta tester Eric Greenwade, chief IT architect at the Idaho National Engineering and Environmental Laboratory, said the new version's use of containers, or zones — a provisioning capability that isolates users and applications on a server — is a major improvement. "I don't have to buy a box for every single group that believes they have a need for their own box," he said.

says his exchange's options-trading capacity rose with Solaris 10

Because Solaris 10 is "lighter weight," meaning it's less intrusive on applications, performance has improved, Greenwade said. He also cited Sun's new TCP/IP stack as a plus.

The Solaris improvements are enough to eliminate cost as a deciding factor between Solaris or Linux, Greenwade said. He argued that Linux isn't necessarily inexpensive, because it often requires the addition of third-party tools to match functionality that's built into Solaris.

But the issue is complicated. The national lab in Idaho Falls also uses Linux systems. "Linux is in a lot of people's hands," Greenwade said, and all the users of the open-source operating system provide "a depth and breadth of feedback that you can't get in almost any other software testing program." As a result, features are added to Linux more quickly, he said.

Bill Morgan, CIO at Philadelphia Stock Exchange Inc., has a new electronic options-trading system that runs on Solaris 10, which he said has improved trading capacity by 36%. Like Greenwade, he credited performance improvements to the TCP/IP stack, as well as improved multithreading support and a new feature called DTrace (for Dynamic Tracing) that tunes application performance.

Thanks to Solaris, the stock exchange expects to reduce the amount of new hardware it needs to buy in order to scale up the trading system. "You can in effect scale within the same machine, as opposed to adding servers," Morgan said.

But Sun may still have work to do on cost issues that are important to some users.

Gary Westaway, data center operations manager at Sears Canada Inc. in Toronto, manages more than 750 servers in a mixed environment. He called Sun's technology proprietary and its licensing terms costly. For instance, Westaway said Sun informed him that his Sun server warranty would be voided if he installed the servers in anything other than a Sun rack, which he called "the most expensive rack on the face of this planet."

However, Sun officials said that isn't true for its x86-based systems. They said servers can be mounted in third-party racks, provided that the racks meet certain design requirements, and Sun will honor the warranty. 49641

Robert McMillan of the IDG News Service contributed to this story.

MORE ON LINUX AND UNIX

For additional news, visit our Operating Systems Special Coverage page online

QuickLink 41500
www.computerworld.com

Vendor Tries to Regain Footing on Wall Street

NEW YORK

Sun Microsystems last week fired off a barrage of product promotions, upgrades and service announcements here in an attempt to retake its traditional stronghold in the financial community.

At a banquet hall full of financial services executives, Sun President Jonathan Schwartz made the case that Solaris offers better computing performance and systems management for less money than comparable Linux operating systems.

Schwartz acknowledged that Sun failed to offer the low-cost servers that Wall Street users sought in the past few years. "We didn't have much to deliver," he said. "Now, our shelves are full."

"There's no question that Sun was tremendously successful in the financial community when it was less price-sensitive, but they then lost ground to Linux," said Gordon Haff, an analyst at Illuminata Inc. in Nashua, N.H., who attended the event.

In an effort to take back customers that Sun lost to Linux, Schwartz announced a 50% discount on Solaris right-to-use licenses for customers upgrading from Linux. Promotions geared toward financial companies include a trade-in program offering cash credits to users switching from servers based on Intel's Xeon processors to Sun Fire systems with AMD's Opteron chips. Sun also is offering a free trial of a Sun Fire V20z server and Solaris 10 to select customers.

Test Case

Many of the product announcements weren't really new, Haff said, adding that last week's event was an effort by Sun officials to show that "they have completely changed the company's strategy. This is a test case for the future. They need to succeed here on Wall Street."

Schwartz has affectionately referred to the financial services industry as "the swamp from which we spawned." But with the economic downturn that began in 2000, Sun's cozy relationship with the industry cooled, and the company found itself on the losing end of a price/performance war against Linux running on Intel-based systems.

says Sun's "shelves are full" of low-cost systems for Wall Street users

Sun will have its work cut out for it when it comes to convincing the financial industry that it can be a low-cost server provider, said Dan Stivers, CEO of 7ticks IT Consulting Inc. in Chicago. "The financial industry as a whole is not buying the fact that there is a better cost return by paying fees to Microsoft or Sun," he said.

For some users, though, pricing isn't the whole story.

"We have to look at the whole value proposition, though of course price itself is important," said Steve Rubinow, chief technology officer at Chicago-based Archipelago Holdings Inc., which operates an electronic stock exchange. "If I can manage an environment of [just] Sun servers and avoid support headaches, running Sun offers an advantage."

Rubinow said that Archipelago had been eyeing Linux systems but that new technologies such as Solaris 10 were a major factor in keeping the company in the Sun camp.

The Philadelphia Stock Exchange is evaluating Linux, but it's sticking with Solaris in order to get a new electronic options-trading system up and running in a hurry. "We already had an installed base of Sparc and Solaris, so the thing that would enable us to get to market fastest was to build upon what we had," said CIO Bill Morgan.

– Marc Ferranti and Robert McMillan, IDG News Service

BRIEFS

SAP, Kimberly-Clark Team Up on Apps

SAP AG and Dallas-based Kimberly-Clark Corp. said they're jointly developing a set of marketing applications for makers of consumer goods. The "marketing resource management" software will expand upon SAP's CRM applications and further automate tasks such as planning, budgeting and measuring the results of marketing campaigns, the two companies said. Shipments are due within the next 12 months.

Exploit Code Posted For Microsoft Flaw

At least three programs that seek to exploit a JPEG-related security hole in many of Microsoft Corp.'s products have been posted on the Internet. Attackers could use two of the exploit programs to run malicious code on unpatched systems, security researchers said. Microsoft again urged users to install a patch that it released two weeks ago or implement a set of work-arounds that it also detailed.

Microsoft CFO Says Purchases May Rise

Microsoft and SAP decided earlier this year not to pursue a merger. But John Connors, Microsoft's chief financial officer, said during a speech last week that the number of large acquisitions made by the software vendor is likely to increase. "There are not many SAPs out there, but there is the potential that we could do a few big ones," Connors told an audience in Palo Alto, Calif.

Short Takes

IBM and THE BOEING CO. said they're teaming up to compete for government systems contracts involving homeland security, military communications and intelligence operations. . . . MICROSOFT released a permanent fix for a virtual private networking flaw in its Windows XP Service Pack 2.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

IBM to Seduce, Not Compel, Notes Users . . .

. . . to adopt DB2 as the primary data store in Domino/Notes 7 when it's released in next year's second quarter. Ken Bisconti, vice president of Lotus and software portal products at IBM, acknowledges that the document-centric object store built into Domino and Notes "has not been readily compatible with relational databases." That's putting it mildly, according to some Notes experts [QuickLink 49313]. Getting Notes information into a relational database has been something of a pain, but Bisconti says that pain goes away with Release 7. An optional DB2 data store can be fully integrated with Notes, including e-mail and calendaring applications. Bisconti emphasizes, though, that no user is going to be force-marched to DB2 land. "The additional capability is an option, not a requirement," he states — repeatedly. But you can almost hear the wooing in Bisconti's voice when he touts the advantages that Domino and Notes users will get from a fully integrated database. It's easier for DBAs to administer a single-data-store architecture, he says. Plus, you can perform Notes replication functions on your DB2 database. And you'll get the cool things a real database offers, such as stored procedures, relational joins and improved performance on ad hoc queries. Bisconti acknowledges that Release 7's DB2 integration will lack some of the responsiveness and storage capacity of a Notes data store because IBM is focusing on getting the integration right. Release 8 will address those shortcomings, when it ships in 2007 or so, he says.

NUMBER OF NOTES USERS, SAYS IBM

"You say 'tomato' . . .

. . . I say 'a spherical red fruit loaded with small seeds.'" With apologies to Fred Astaire, you can't call off the need for a complex naming system, especially if you're running an online catalog that takes product descriptions from hundreds of health care suppliers and presents the ordering data to 1,700 not-for-profit hospitals nationwide. That's the dilemma Premier Inc. CIO Joseph Pleasant confronted earlier this year when he loaded into his "item master" 1.5 million product descriptions that needed to be understandable to suppliers as well as potential buyers. "They're not always speaking the same language," observes Pleasant from Premier's Charlotte, N.C., headquarters. "Suppliers use unique branding terms that they need to refer to, yet it must make sense for hospital buyers, too." To bridge the definition chasm, Pleasant uses Perfect Product Suite from FullTilt Solutions Inc. in Wayne, Pa. With it, he can put data into a standard format, cleanse it and automatically present the information to various constituencies. He says the FullTilt tool has saved Premier's hospitals oodles of money and has significantly improved the ordering and delivery process. Early next month, FullTilt will release Version 5, which will add a business process engine and a set of visual process-design tools, among other features. The improved automation will likely be appreciated by Pleasant, especially since he plans to more than double the number of product descriptions in his item master list by the end of 2005.

ONLINE ITEMS IN PREMIER'S CATALOG BY END OF 2005

Get the lowdown on who's using . . .

. . . which IT assets when and for how long. That's the promise from Evident Software Inc. in Bloomfield, N.J. The company's Evident Enterprise software can track group or individual usage of disk capacity, network bandwidth, application resources, CPU cycles and other data that can be computed into chargeback schemes or used to buttress application consolidation or deployment project plans. Evident Enterprise 5 is set to ship in mid-October and adds relational database support, visualization tools and 70 predefined reports of various usage patterns. It will also add Linux as a supported operating system, joining Solaris and Windows. A typical installation runs about $350,000.

Breadth of monitoring ideal for catching . . .

. . . interdependencies among systems. Depth isn't as necessary. Al Eisaian, CEO of Pasadena, Calif.-based Integrien Corp., makes that argument to network managers who feel the deployment of large-scale management frameworks, such as Tivoli and Unicenter, "are overkill." He says, "Scope is much more important than depth." That's because you can more readily detect how problems in one infrastructure area can affect other parts of your network. Alive 4.0, which ships today, uses agent-free technology to monitor everything from network switches and routers to the operating system layer (though not if you run Mac OS X) and all IP-based applications. The upgrade adds two views of the state of your network and application environment: a transaction view, which gives you end-to-end monitoring of IT processes, and a profile view, which defines the domains of systems administrators. A license is $650 per IP device, and a subscription to a service is $75 per monitored node. **ID 49601**

"For midsized ond lorge orgonizations, o significont Linux deployment will neither be free nor eosily occomplished. In foct, respondents ot lorge orgonizations reported that o wholesale switch to Linux from Windows® or Unix would significontly increose TCO for the forseeable future."

–Laura DiDio, The Yonkee Group, April 2004
Linux, Unix, ond Windows TCO Comparison

The Yankee Group, a global research and consulting firm, concluded that a significant switch to Linux from Windows or Unix could cost three to four times as much without delivering tangibly better performance or business value. These findings are based on a non-sponsored worldwide survey of 1,000 IT administrators and C-level executives in midsized and large enterprises.

To get the full study, visit **microsoft.com/getthefacts**

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Microsoft Windows Server System

Storage Managers Seek Better Backup Methods

Disk to disk backup tools, virtual tape libraries top list

BY LUCAS MEARIAN

Faced with shrinking backup windows and continued data growth IT managers said at a conference last week that they're trying to cope by consolidating storage-area networks (SANs), getting a better use of their storage infrastructures and increasing the amount of online disk storage at their disposal.

Virtual tape libraries (VTLs) and disk to disk backup systems topped the list of technologies that users at the Storage Decisions 2004 conference said they're exploring to help [illegible]

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Manny Punzo Jr., a senior associate in SAN operations at Discover Financial Services Inc. in Riverwoods, Ill., said he's looking at VTLs — disk arrays that appear to be tape libraries to application servers — to help him address "a concern that our backup window is not being met in all cases."

Microsoft Corp. became the latest vendor to promise support for disk-based backups [illegible] the conference. It said its forthcoming software, called Data Protection Server, [illegible] (see story, right).

Dennis Moody, director of enterprise architecture at ReliaStar Financial Corp. in Minneapolis, has three data centers and is working to replicate information among them for business continuity and disaster recovery.

Moore said he's testing VTL technology as a way to help ReliaStar migrate from digital linear tape drives to linear tape open products. VTLs would make it possible to copy data from the DLT drives to disks before moving the information to LTO-based tape libraries, he said.

IT managers also need to have access to sufficient information about their storage systems, Moore said. "If you're not getting reports on data storage systems every day, you've got data at risk," he said, adding that an audit is being conducted within his company to validate the chain of custody for data among end users.

Michael Salins, a senior systems engineer at The Interpublic Group of Companies Inc. in New York, said he chose storage management tools from CommVault Systems Inc. because the built-in reporting capabilities were "leaps and bounds" above other products. **49598**

Microsoft Enters Data Backup Arena

CHICAGO

Microsoft's announcement of a disk-to-disk backup application designed to consolidate data backups on Windows servers positions the company to compete against storage management stalwarts such as Veritas Software Corp. and EMC Corp.'s Legato Software division.

At last week's conference, Microsoft said its Data Protection Server software is due for beta testing in the first quarter of 2005 and general availability in the second half of next year.

"About 70% of backup cost is labor. That's what we're addressing," said Jeff Price, senior director of Microsoft's Windows Server division. By setting policies to automate backups, storage administrators will no longer have to manually start the procedures. The software will also enable end users to back up their own files "without involving IT," he said.

Some attendees said they would consider buying Data Protection Server because of the ease with which it could be integrated with Windows.

Jim Grisham, a chief IT architect at Northrop Grumman Corp. in Los Angeles, said the company's IT staffers have to meet strict data recovery deadlines and must be able to recover all of the data at any given time – standards that tape can't currently meet.

Northrop Grumman plans to install disk-to-disk software, but Grisham said he would like to buy an application that requires the least amount of training for Northrop Grumman's systems administrators. "Sometimes, if a product makes their lives easier, it's worth it," he noted.

But John Blackman, a systems architect at a West Coast-based bank that he asked not be named, said proven data backup vendors offer far more mature products than Data Protection Server. Something new, even from Microsoft, would be a hard sell inside his company, Blackman said.

Data Protection Server is built on top of Windows Storage Server 2003 and Microsoft's Active Directory, which works with the backup tool to automatically identify file servers and install software agents that kick off backups based on preset policies.

– *Lucas Mearian*

GAO Says Offshoring Could Stymie Tech Job Growth

But agency warns that data is lacking

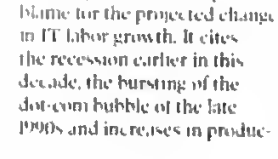
BY PATRICK THIBODEAU

A new government report indicates that offshore outsourcing could hurt IT employment growth over the next decade. But the study, released last week by the U.S. Government Accountability Office, is sprinkled with caveats and qualifiers because of what the GAO said is a lack of sufficient data.

The GAO acknowledged in the report, which was requested by U.S. Democrats in the House of Representatives, that the [illegible] existing data [illegible] provide a complete picture of the impact of offshore labor on the U.S. economy. At best, the available data provides only "some clues" to the extent of offshoring activity, the GAO said. Further efforts will be needed to understand the "small but growing trend," it added.

Government projections indicate that IT-related occupations are expected to grow faster than most occupations through 2012, according to the GAO. Indeed, seven of the 30 fastest-growing occupations are related to IT. But the projected rate of growth for those occupations for the period from 2002 to 2012 is significantly lower than the rate projected for 2000 to 2010, the GAO reported.

The report doesn't say with certainty that offshoring is to blame for the projected change in IT labor growth. It cites the recession earlier in this decade, the bursting of the dot-com bubble of the late 1990s and increases in productivity as potential contributors to the revised job forecast.



The GAO report said existing data doesn't provide the complete picture.

In terms of offshoring's effect on U.S. workers, the GAO said the U.S. Department of Labor's survey on mass layoffs shows that layoffs attributable to the shift of jobs to other countries have increased since 1999 but still represent a small fraction of job cuts. Of the 1.5 million layoffs reported in 2003, just 0.9% were the result of overseas relocation — and most of those layoffs were in the manufacturing sector. But the GAO said the survey has shortcomings because it covers only large companies and those that laid off at least 50 people in a five-week period.

In a statement, Rep. Jay Inslee (D-Wash.) called the report "a welcome first step" in understanding the offshoring trend. But, he said, "I remain concerned that this report is conspicuously incomplete." Inslee added that if needed data is indeed lacking, "then it is imperative that we push further studies that will fill the gap between raw numbers and public policy."

Marcus Courtney, president of the Seattle-based Washington Alliance of Technology Workers, said the GAO study clearly points to a need for better data. "For the GAO to give Congress policy recommendations, they need better information," said Courtney, who called on Congress to compel companies to provide data so the government can "get a handle on the trend." **49643**

Storage Managers Seek Better Backup Methods

Disk-to-disk backup tools, virtual tape libraries top list

BY LUCAS MEARIAN
CHICAGO

FACED WITH shrinking backup windows and continued data growth, IT managers said at a conference last week that they're trying to cope by consolidating storage-area networks (SAN), getting a better view of their storage infrastructures and increasing the amount of online disk storage at their disposal.

Virtual tape libraries (VTL) and disk-to-disk backup systems topped the list of technologies that users at the Storage Decisions 2004 conference here said they're rolling out in order to speed up their data backup and recovery procedures.

"We keep getting more pressure to bring down the data recovery time," said Robert Stevenson, a technology strategist at Nielsen Media Research Inc. in New York. Stevenson expects the company to install VTLs from Storage Technology Corp., as well as disk-to-disk backup technology.

"Disk-to-disk backup gives you better performance across the whole organization," he said. "Our struggle right now is when you get these 20TB to 30TB database warehouses. You don't want to have to recover [the data] from tape."

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Microsoft Corp. became the latest vendor to promise support for disk-based backups, announcing at the conference that it plans to release software called Data Protection Server late next year (see story, right).

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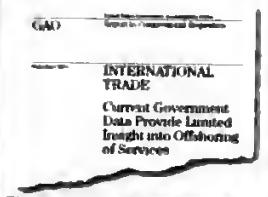

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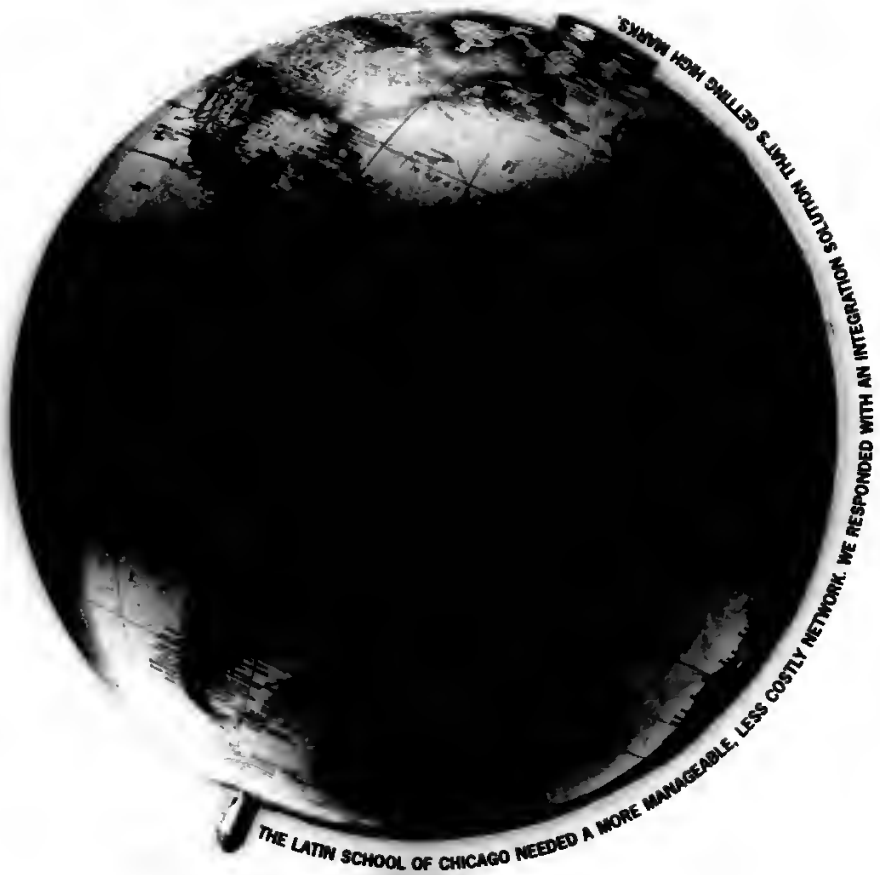
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BRIEFS

Oracle to Support Unstructured Data

Oracle Corp. confirmed that it plans to upgrade its Collaboration Suite software with content management capabilities supporting the use of unstructured data, but it declined to provide any details about the new technology. London-based consulting firm Ovum Ltd. said in a report issued this month that the upgrade is code-named Tsunami and due to be announced in the fourth quarter.

SAP Brings Back Europe Conference

SAP AG said it plans to revive the European version of its Sapphire user conference next April. Sapphire Europe was dropped after the 2002 event in favor of smaller, more localized conferences. But an SAP spokesman said users told the software vendor that they "missed the opportunity to interact at a European level." The company plans to hold the conference in Copenhagen.

Ford Signs Deal For IP Telephony

SBC Communications Inc. said it will design, install and manage an IP telephony system for more than 50,000 users at Ford Motor Co. The system will be rolled out over the next three years, using networking equipment and IP phones from Cisco Systems Inc. The companies didn't disclose the projected cost of the rollout, which also will converge Ford's voice, data and video networks.

Short Takes

MICROSOFT CORP. said it will offer government users access to the source code for Office System 2003 under its shared-source license program. . . . SIEMENS AG said it's migrating about 350,000 end users in more than 100 business units from Version 5.5 of Microsoft's Exchange messaging software to Exchange 2003 [QuickLink 49590].

Users Bemoan Software Price Increases for Dual-Core CPUs

Development of servers with two processors leads to rise in license fees

BY THOMAS HOFFMAN
ORLANDO

THE ADVENT OF dual-core processors with two CPUs on a single chip is causing many IT managers to wring their hands over the hefty increases in licensing fees sought by major software vendors.

Users and analysts at Gartner Inc.'s IT & Software Asset Management Summits here last week said companies that have installed servers based on dual-core chips or that have made plans to do so are being hit by vendors such as IBM and Oracle Corp. with software licensing fees that are twice what they were paying.

Vendors are trying to justify the increases on the grounds that the application and database servers on which their software runs will contain twice as many processors when they're using dual-core devices, conference attendees added. Some said the price increases may be a starting point for negotiations, but they reluctantly acknowledged that their companies will likely have to pay more for software in the long term.

"We started negotiating with Oracle on a new database contract last month and were shocked to see how much more expensive the software was than we expected," said an IT asset manager at a large catalog retailer who asked not to be identified.

The retailer, which is installing a Sun Microsystems Inc. server that uses dual-core technology, has since negotiated discounted terms with Oracle. "But it's still more expensive than we anticipated," the asset manager said.

In April, Oracle clarified information posted on its Web site to inform customers that "a multicore chip with N processor cores is treated as N processors" for software licensing purposes. "But that's the way we've always charged," said Jacqueline Woods, vice president of global licensing and pricing strategy at Oracle.

A spokesman for IBM confirmed that it plans to continue charging users based on the number of processors on their servers. "There's always room for negotiation, but one processor is the basis for the licensing cost," the spokesman said. "Whether two processors sit on the same piece of silicon or not, we'll still charge for those two processors."

> **"It's a lot like mainframe-based software pricing – you pay more for larger processors, but you don't get any more software functionality out of it."**
>
> **GREGORY WOODS**, OKLAHOMA DEPARTMENT OF HUMAN SERVICES

Gartner analyst Alvin Park said he has heard from Microsoft Corp. users that they're getting similar messages about software costs for systems with dual-core chips.

But Sunny Jensen Charlebois, product manager in Microsoft's worldwide licensing and pricing group, said in an e-mail statement that the company has "nothing to announce" at this time. Because of the complexity of the issue, Microsoft is continuing to gather feedback from customers and business partners "to evaluate how they will use this technology," she added.

Not surprisingly, 10 IT managers interviewed at the conference all said the increased licensing fees are unfair.

"It's a lot like mainframe-based software pricing — you pay more for larger processors, but you don't get any more software functionality out of it," said Gregory Wood, director of critical support services for the IT unit within the Oklahoma Department of Human Services in Oklahoma City.

Donnie Rogers, an IT support manager at AAI Corp. in Hunt Valley, Md., hopes that any future installations of multicore servers won't significantly affect the defense contractor's licensing costs for at least a year. AAI runs Oracle's ERP software and databases.

"What I would do is ask Oracle, 'What can you do to keep me in my operating budget for now and handle any software license increases on an incremental basis?' " Rogers said.

49648

Correction

The last name of TowerGroup analyst Robert Hegarty was misspelled in a story about CRM software for the financial services industry ("Untying Customer Knots") that ran in the Sept. 20 issue. Knowledge Center earnout report.

IT Switches From Hardware Leasing to Purchasing

ORLANDO

A growing number of IT managers are shifting their procurement strategies in favor of purchasing PCs and servers instead of leasing them, according to attendees at last week's IT & Software Asset Management Summits.

Gartner analyst Frances O'Brien said the shift is being driven by increasing interest rates and disenchantment among users with leasing "gotchas," such as penalties for late returns and damages.

"Companies are realizing that they're not going to return equipment back to the lessor on time, and it makes more economic sense to buy the equipment outright," said O'Brien, who spoke at the conference.

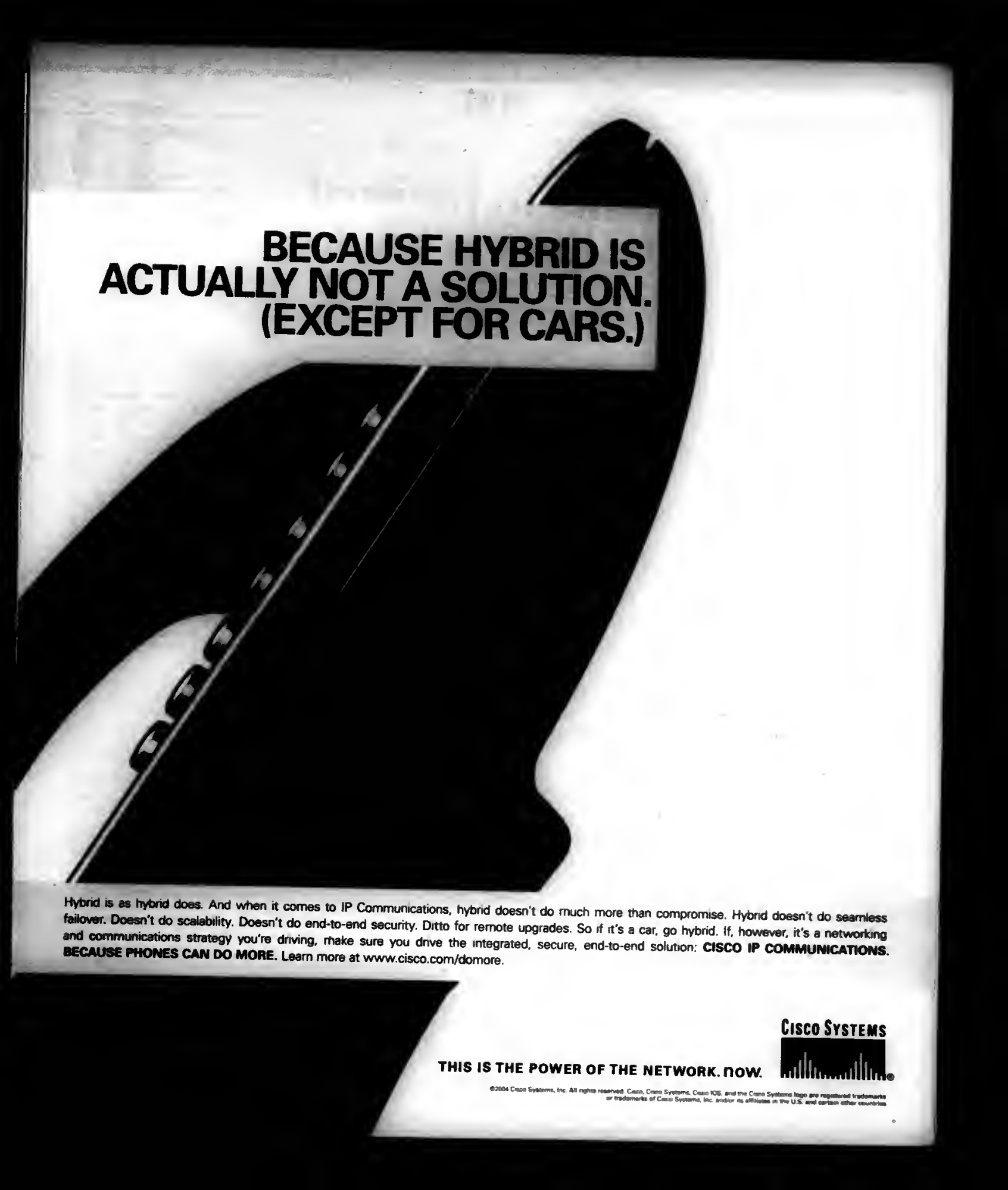
O'Brien's comments map with feedback from several IT managers who attended the Gartner-sponsored event.

For instance, an IT acquisition manager at a large pharmaceutical manufacturer that recently bought the company she was working for said she had been leasing equipment. But after the acquisition, her unit switched to a purchasing approach. That was done partly to mesh with the new parent company's technology procurement model, said the manager, who asked not to be identified. But it also was driven by the recent rise in long-term interest rates, she said.

For some other attendees, purchasing IT equipment remains business as usual. Federal Home Loan Mortgage Corp. conducts a purchase-vs.-lease analysis every 18 months, "and we've continued to purchase," said Craig Robles, an IT asset manager at the McLean, Va.-based home financing company, known as Freddie Mac.

The company is increasing its use of laptop PCs, and the costs of paying for scratches and other damages under a lease "just aren't advantageous to us," Robles said. "It makes more economic sense for us to purchase."

– *Thomas Hoffman*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(EXCEPT FOR CARS.)
Hybrid is as hybrid does. And when it comes to IP Communications, hybrid doesn't do much more than compromise. Hybrid doesn't do seamless failover. Doesn't do scalability. Doesn't do end-to-end security. Ditto for remote upgrades. So if it's a car, go hybrid. If, however, it's a networking and communications strategy you're driving, make sure you drive the integrated, secure, end-to-end solution: CISCO IP COMMUNICATIONS. BECAUSE PHONES CAN DO MORE. Learn more at www.cisco.com/domore.
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HP's CIO Points to Internal Issues in ERP Project Snafus

BY PATRICK THIBODEAU AND DON TENNANT

EIGHT MONTHS after he became CIO and executive vice president of global operations at Hewlett-Packard Co., **Gilles Bouchard** was put in about as unenviable a position as an IT manager can find himself. In August, CEO Carly Fiorina said HP had "executed poorly" on a migration to an order-processing and supply chain system based on SAP AG's applications [QuickLink 48819]. She partly blamed the problems for a $400 million third-quarter revenue shortfall within HP's enterprise servers and storage group. In an interview this month, Bouchard spoke candidly about what it was like to be on the IT hot seat. Excerpts follow:

Given that you're directly responsible for HP's supply chains and IT systems, what was your role in the failed ERP migration? I got this job in December, and in the following four or five months, what I didn't want to do was merge business and IT just at the corporate level. I wanted to also merge it in the field, in each region and each country. A lot of the pieces of the supply chain, order management and IT [functions] were in different businesses. Bringing those things together into one operation became official on May 1.

This [ERP migration] problem broke out three weeks later in the Americas region. It was one of many transitions we had done, and are still doing, where we simplify our portfolio of ERP [systems]. This was the 35th transition we had done; 34 had gone well, and this one did not go well.

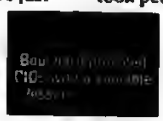
What went wrong? It's a lot of little things that added up. Not one or two of them would have created the problem, but the combination of them created a bigger problem than we expected. We had planned for three weeks of disruption, and there were six weeks.

These problems are in three major categories. One we call "working across silos." The team that was driving this program had to work with other parts of the company. And working across these seams proved difficult. . . . Secondly, there were a lot of data-integrity [problems]. Orders fell out between the legacy front-end system and SAP on the back end, which required a lot of manual intervention. . . . The third element was increased demand. This migration had to do with our Intel-based server business. The demand really increased for those products, and it's still very high right now, which is good news. But it put even more pressure on the whole system. We should have had a contingency plan for four, five or six weeks.

HP has made it clear that this was an implementation problem, not an SAP problem. So where exactly does SAP fit into the mix? Clearly there was an SAP component to it, but the issue that created the problem was not the SAP [software] itself. It was the set of business processes that went around it.

Do you agree with Carly Fiorina's conclusion that HP "executed poorly on the migration?" Yes. When orders fall out and there's more manual intervention and there are data integrity issues, I would call those execution issues.

What should you have done differently? In August, we went back and basically polled everybody involved in the program and all the stakeholders and tried to turn this into a learning experience. We just got the results a few weeks ago. . . . When you consolidate, by definition, there's a lot more interdependencies. When everybody's got their own ERP [system], they can all work within their own silos. Now there's a lot more commonality and a lot more sharing, and a lot of learning in terms of program management. We've invested a lot in program management.



Fiorina fired three managers because of what happened in the third quarter. How did you escape the guillotine? Why did we miss [our numbers in] Q3? It was not just because of this. We have four businesses at HP: PCs, servers, services and printers. In Q3, three of the businesses met their goals and did well, and one missed. And it missed for three reasons. One was the SAP transition, one was weakness in the storage business, and one was some channel issues in Europe. What Carly did is she put accountability at the business management level. She took people out who were in charge of those businesses.

Are the problems fixed? Can customers expect their orders on time? The demand being still strong, we have some product shortages. So you might find a customer with a lead time that's longer than ideal, but that has nothing to do with what happened in Q3. **49604**

READ MORE ONLINE

Additional thoughts: Visit our Web site for the full interview with Gilles Bouchard. **QuickLink 49631**

Reorg move: A new division in HP's server group aims to unify blade server development. **QuickLink 49563 www.computerworld.com**

University Bedeviled by Portal Rollout Problems

PeopleSoft system crash at UMass has lingering effects

BY MARC L. SONGINI

A student information system built around PeopleSoft Inc.'s applications crashed earlier this month at the University of Massachusetts, causing serious disruptions for thousands of students and forcing the school's IT staffers to limit the use of a new software portal.

The system crash occurred Sept. 7 at the main UMass campus in Amherst, and university spokesman Ed Blaguszewski said there are still periods when the student administration applications are bogged down. IT workers continue to troubleshoot the system in an effort to fully resolve the problems, he added.

UMass is the second university to be waylaid by glitches in PeopleSoft installations at the start of the new school year. The University of Indiana disclosed earlier this month that problems on a PeopleSoft rollout there had temporarily left as many as 3,000 students without access to promised financial aid [QuickLink 49349].

At UMass, the applications automate tasks such as registration, financial aid services and preparation of class schedules. Blaguszewski said the problems arose after the school replaced a homegrown, Web-based front-end application with PeopleSoft's portal software in July.

Some initial bugs were worked out during testing, and the new, more user-friendly portal went live in time for the start of classes in early September. At first, the system's overall performance was satisfactory, despite slowdowns at times, Blaguszewski said. But then the system crashed, and end-user access remained slow and intermittent after it was restored.

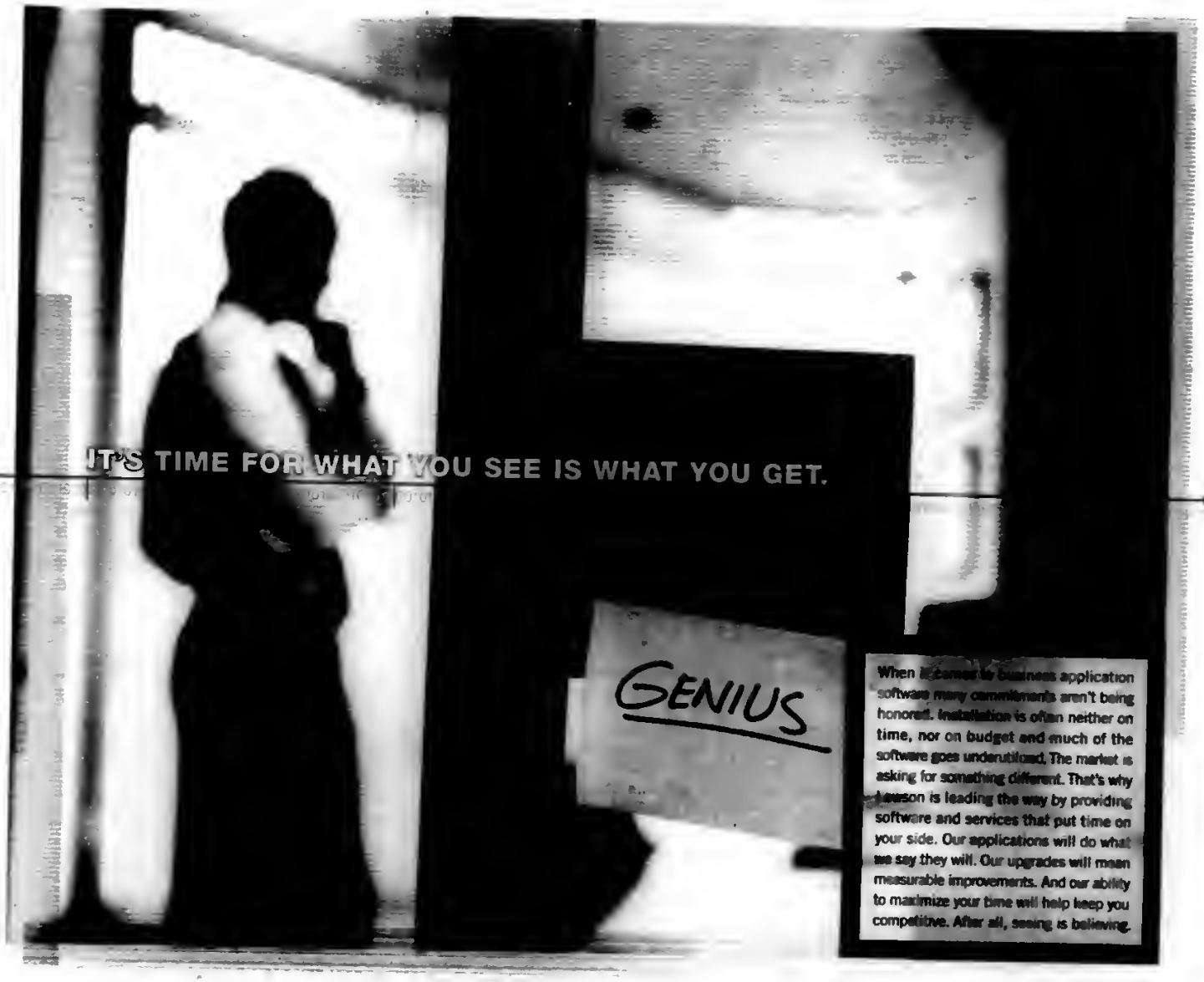
That resulted in "significant confusion, frustration and inconvenience across campus" when classes began on Sept. 8, Blaguszewski said. Some students didn't know where their classes were being held. Others were unable to add or drop classes. The problems prompted school officials to use e-mail blasts and post more data online to provide information to students.

According to Blaguszewski, the UMass IT staff worked around the clock to fix the problems, with help from a third-party consultant and PeopleSoft employees. As part of an interim work-around, IT made configuration changes and staggered portal usage by user type, requiring students and faculty members to log on at different times to prevent another crash.

"The university community now has full access to the system, and we will monitor performance closely," Blaguszewski said, adding that the cause of the system crash is still unknown. He noted that the school's database of student information remains intact.

PeopleSoft spokesman Steve Swasey said the problems weren't caused by the company's software and declined to comment further on the situation at UMass.

Lori Goss, education and government marketing director at PeopleSoft, also declined to comment about the problems during an interview at the software vendor's Connect 2004 conference in San Francisco. **49632**



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LAWSON

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Continued from page 1

Kumar

agreement over the next 18 months.

As a result of the deferred-prosecution deal between the company and the DOJ, "CA will be better off," said Kenneth Pandaleon, a senior network engineer at NBTY Inc., a Bohemia, N.Y.-based maker of nutritional products.

Kumar and former head of worldwide sales Stephen Richards both pleaded not guilty to 10 charges, including securities fraud and obstruction of justice, in U.S. District Court in Brooklyn, N.Y., last Thursday, one day after the indictments against them were unsealed. Both men were ordered by the court to post a $5 million bond and surrender their passports.

Meanwhile, Stephen Wightin, CA's former general counsel, pleaded guilty to similar charges for his role in the alleged accounting scheme, which dates to 1999 and 2000.

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Alleged Falsifications

The government claims that Kumar and Richards personally advanced the goals of the accounting practice, which was built around a so-called 35-day month. For example, the indictment says that on July 8, 1999, Kumar was flown on the CA corporate jet to Paris to negotiate a $32 million software licensing agreement, which was falsely backdated to June 30.

The DOJ said CA has accepted responsibility for the alleged illegal conduct of its former executives as part of the cooperation deal that was announced last week. The company reached a similar agreement with the U.S. Securities and Exchange Commission to settle securities fraud charges that the SEC filed in the Brooklyn court.

SANJAY KUMAR, former CA CEO, arrives at U.S. District Court in Brooklyn for his arraignment.

"With these agreements, CA has taken a critical step in closing this deeply troubling chapter in its history," Lewis Ranieri, the company's chairman, said in a statement. He added that CA officials "fully support the government's efforts to bring all responsible parties to justice."

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The months of uncertainty also have left CA "a bit frozen internally in terms of making aggressive and imaginative moves in technology," said Rich Ptak, an analyst at Ptak, Noel & Associates Inc. in Amherst, N.H. "But they've done a pretty good job overall."

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Continued from page 1

Woolworths

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But Roets said Woolworths has encountered no major technology problems since commencing the project in July. The retailer plans to deploy the application in a production environment by the end of next month. To ensure that performance is optimal, Woolworths kept the application simple and let the J2EE application and portal servers handle security and data refreshes, Roets said.

Yaniv Cohen, CEO of San Jose-based Mainsoft, said customers generally experience a [illegible] performance degradation [illegible] native Java performance. But he said his company's goal is to improve the product so its performance will eventually be equivalent to that of native Java.

Cohen said Visual MainWin for J2EE installs on top of Visual Studio .Net and connects directly to J2EE application servers. Users work in Microsoft's Visual Basic .Net or C# languages, and the Mainsoft tool compiles the code to Java byte code. The resulting Java class files are packaged into Java Archive files and deployed on a J2EE-based application server, he said.

Mainsoft is targeting Visual MainWin at development shops that have a mix of J2EE and .Net developers. The company is releasing Version 1.5 of the product next week, and it is also working to promote Visual MainWin for J2EE as a means to allow .Net code to run on IBM's eServer zSeries, according to Cohen.

The MainWin tool comes bundled with the open-source Tomcat application server, but it also supports IBM's WebSphere, BEA Systems Inc.'s WebLogic and JBoss Group Inc.'s open-source offering, Cohen said. The product sells for $5,000 per developer, and there are no fees for the runtime environment, he noted.

In-house Savings

Roets said that Woolworths, which operates department stores in Africa and the Middle East, saved 80% of the project cost by opting for the Visual MainWin approach over potential alternatives of hiring outside help or retraining its developers. Although Visual MainWin doesn't support Sybase servers, Woolworths' application runs fine, since the Sybase software is based on J2EE standards.

In addition to Visual MainWin, Woolworths considered the open-source Mono technology, which Novell Inc. acquired last year with Ximian Inc., and Stryon Inc.'s iNet software, which enables programs written in .Net to execute in any Java-enabled environment. But Roets said the retailer's developers would have needed more Java knowledge to work with those tools.

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Woolworths Case Study

PROJECT Upgrade of a homegrown monitoring/alerting system that runs on J2EE-based servers

PROBLEM Woolworths' development staff was skilled in the Microsoft tools environment, not J2EE technology

APPROACH The company wrote the application in Visual Basic .Net using Microsoft tools and used Mainsoft's Visual MainWin for J2EE to recompile the code to Java byte code and deploy the application on a Sybase application server and portal server

Continued from page 1

Kumar

agreement over the next 18 months.

As a result of the deferred-prosecution deal between the company and the DOJ, "CA will be better off," said Kenneth Pandaleon, a senior network engineer at NBTY Inc., a Bohemia, N.Y.-based maker of nutritional products.

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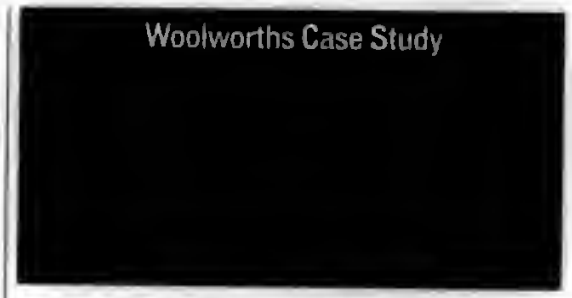

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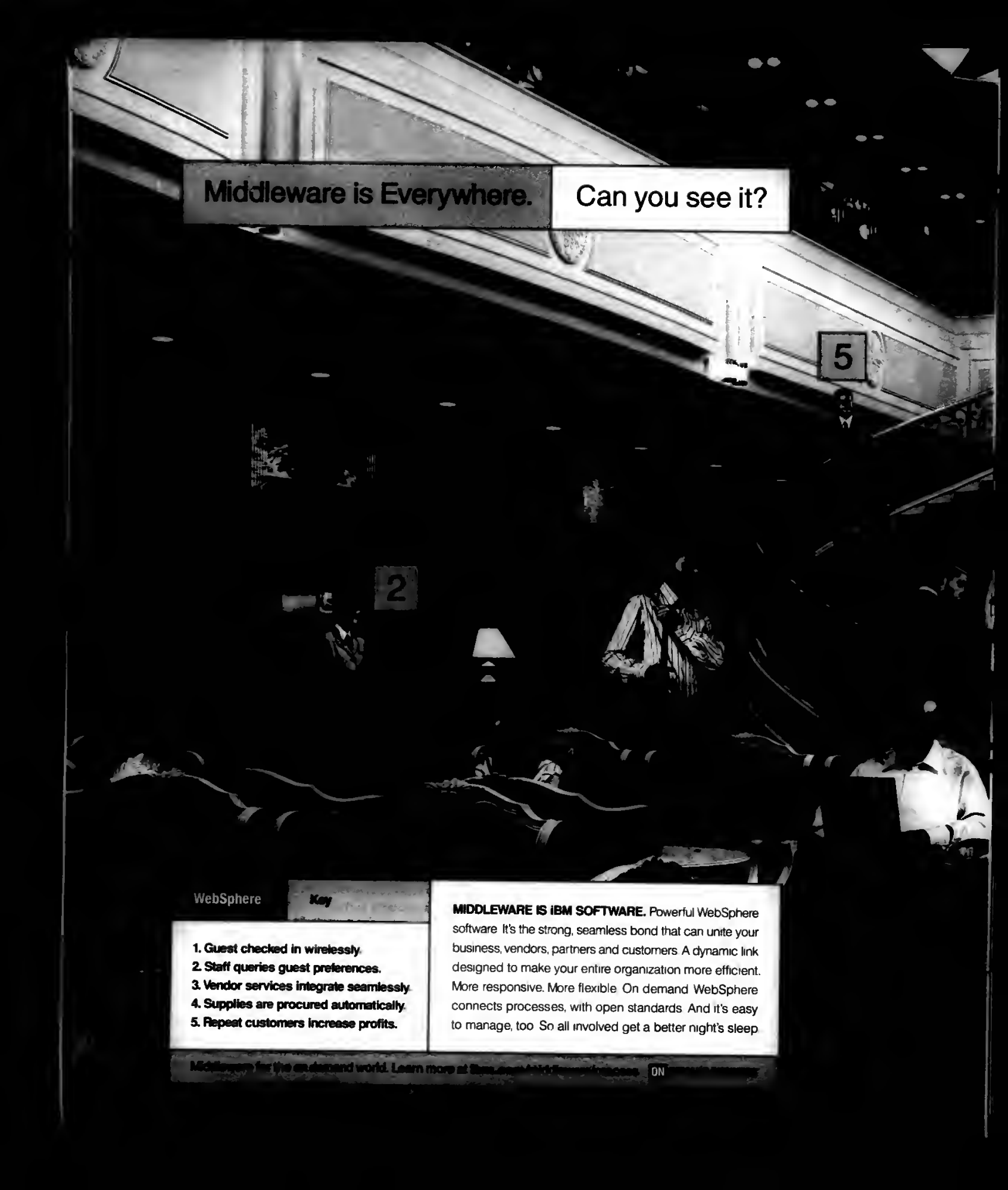
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IBM

Cybertrust CEO Says Merger Driven by Users

BY JAIKUMAR VIJAYAN

Betrusted Holdings Inc. in New York and TruSecure Corp. in Herndon, Va., last week said they're merging to form a single IT security services vendor. The new company will be called Cybertrust Inc. and will have about 1,000 employees, 4,000 clients worldwide and $160 million in annual revenue. John Becker, chairman and CEO of TruSecure, is scheduled to become Cybertrust's CEO. Becker spoke with Computerworld about the merger and competition in the IT security market.

Who drove the merger – TruSecure or Betrusted? It was the customer, actually. Both businesses themselves were very complementary. Betrusted was the larger entity in terms of revenues, but both had a similar outlook in the security space. We also had some contacts historically. Betrusted was very strong in Europe and Asia and had a small but growing presence in the U.S. TruSecure was very strong in the U.S and [had] a small, growing presence in Europe and Asia. As we began dealing with larger and larger customers that have multinational sites, they were looking for a company with more [of a global reach].

What does the ongoing consolidation of the IT security market mean for users? I think it's a good thing for the user community. They're frustrated from being bombarded by 100 different vendors all pitching the latest firewall technology. The bottom line is, the differentiation among these technologies is not great. If you're a large organization with 100 sites around the globe, you're dealing with a $3 million company here or a $5 million one in England. It doesn't give you the comfort that you get when working with a trusted partner that you know and understand.

What do you think the broadening security efforts of major IT vendors, such as IBM, Cisco and Microsoft, is going to mean for pure-play security vendors? For us, since we aren't a product vendor, I think the [trend] is complementary to our business. I believe that large customers are putting more pressure on the Ciscos . . . and Microsofts of the world than on people like Symantec or Trend Micro. Customers have spent an awful lot of money on defensive technologies that are just not working. So they're putting pressure on these vendors to clean up things on the network and the endpoints. Inevitably, when Microsoft gets into this business, they won't kill the Symantecs, but they will put pricing pressure on them. 49603

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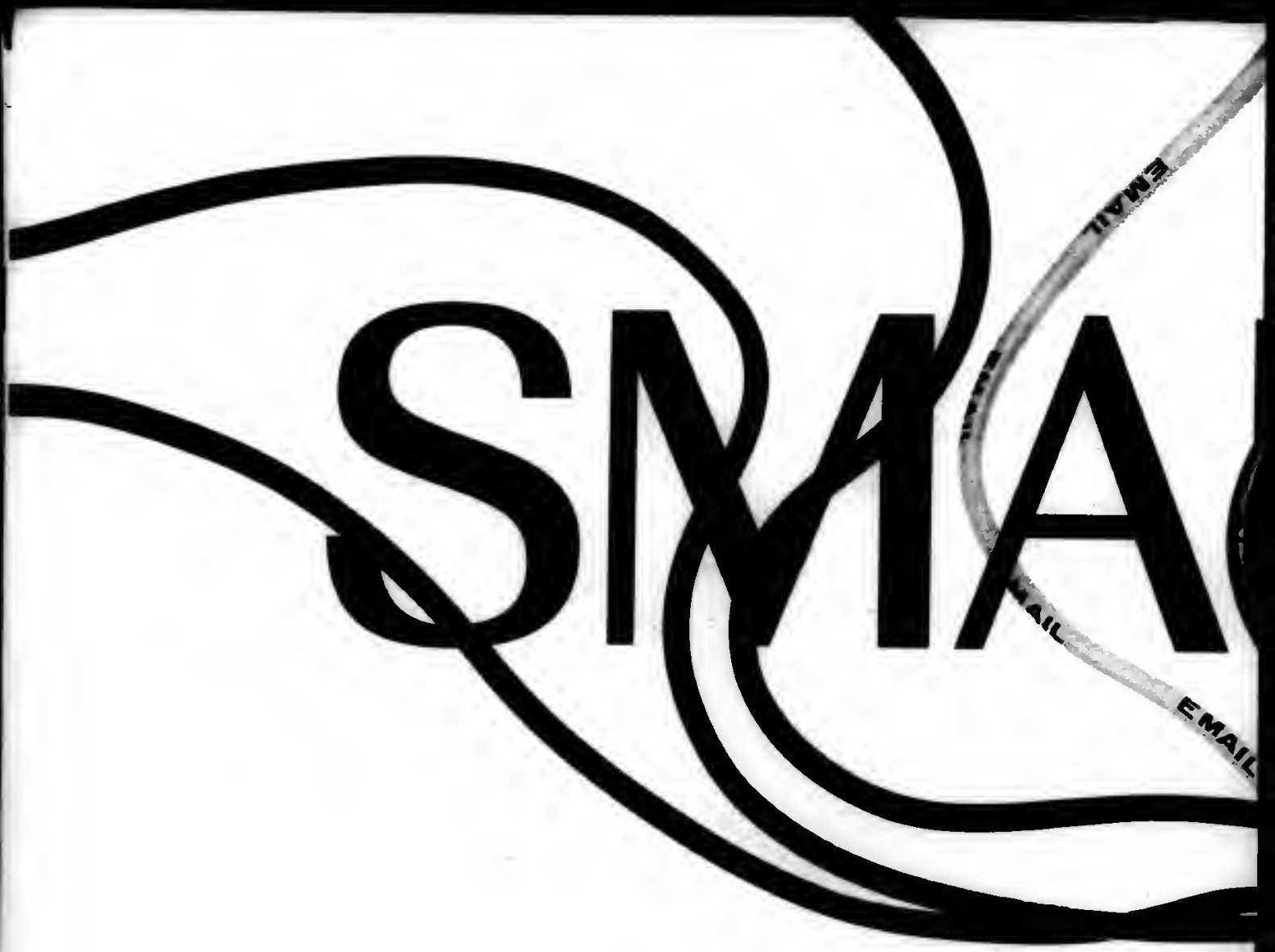

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DON TENNANT

'[Stuff] Happens'

WHAT IS YOUR worst nightmare as a CIO? Spilling chocolate milk in your zSeries? Being assured by your team moments before a hurricane strikes that your sys-

tems are fully mirrored, only to hear one of your sysadmins comment on how much larger and more airy all those mirrors make the data center look?

Or how about this: watching your CEO explain to the world that a poorly executed ERP migration that was your baby cost $400 million in lost revenue and is partially to blame for your company's disappointing third-quarter financials. Wait, let's make it even worse: Let's say the CEO fires three executives over the revenue drop, leaving you to explain why you still have a job. Hold on, let's just go for broke: The botched ERP migration involves SAP systems, and your company markets itself as a savvy provider of SAP consulting services. Now, tell me you wouldn't wake up from *that* one sweating bullets.

That might well be the worst nightmare of Gilles Bouchard, CIO at Hewlett-Packard. But unfortunately, it wasn't the kind he could wake up from — it was his reality.

You've probably read about the ERP consolidation fiasco that HP CEO Carly Fiorina cited last month when she listed the reasons behind the 5% revenue drop suffered by her enterprise servers and storage group [QuickLink 48813]. But what you might not have realized prior to reading our Q&A with Bouchard on page 14 is that HP has handled what had to be a horribly painful and awkward situation with about as much class and guts as a company could possibly demonstrate. And no one deserves the credit for that more than Bouchard.

Believe me, I can attest that there are plenty of other executives in the IT industry who would have hidden under the covers rather than confront the media under such difficult circumstances. And there are countless PR people working as handlers for those executives who would have done everything in their power to either block access to them or control the questions we put to them. I can't help but think back to how Computer Associates' PR machine tried (in vain, of course) to manipulate our questioning of senior CA executives around the time that recently indicted former CEO Sanjay Kumar was booted out. It was as shameful as it was shameless.

When I contrast that nonsense with the way HP has handled its recent PR nightmare, it just blows me away. Throughout the interview that senior editor Patrick Thibodeau and I conducted with him earlier this month, Bouchard never hedged for a heartbeat in responding to a single question, including those awkward ones about why his job was spared and others weren't, and about the impact of the whole mess on HP's credibility as an SAP services provider. And at no point did HP's PR machine make an attempt to prevent us from pursuing a line of questioning in order to spin the story to HP's liking.

Bouchard summed the mess up into two words: "S--- happens." He's absolutely right. It does. And when it does, good CIOs work with their teams to analyze exactly how it happened and then turn it into a positive learning experience. The *best* CIOs have the courage and professionalism to share that experience with their peers, no matter how painful or embarrassing it might be, so that they can learn from it as well. Of all the lessons you can learn from HP's nightmare, that one — by far — is the most valuable. **49607**

Don Tennant

DAVID MOSCHELLA

Vendors Are From Mars, Users Venus

HAVE YOU ever wondered why some IT professionals choose to work on the vendor side of our business, while others prefer the customer side? Most IT people make this decision early in their careers, and few reverse it. It's arguably the single most important fork in the working lives of most *Computerworld* readers, yet it's rarely discussed or even mentioned. Nevertheless, the motivations behind this initial decision tell us a lot about the dynamics of our industry.

It's no secret that IT suppliers and internal IT organizations often have very different cultures, and thus they tend to appeal to very different sets of IT professionals, consciously or subconsciously. My firm has recently been doing a lot of psychographic work on IT executives, and the results are pretty clear. Vendor executives are more oriented toward competition, sales, ownership and compensation. CIOs and other internal IT executives are typically more concerned with softer rewards such as knowledge, achievement and collaboration.

In many ways, this is as it should be. CIOs and other internal IT professionals don't fully control their own destinies and need to get along with their business colleagues if they are to succeed. There isn't a lot of room for renegades, because there isn't a lot of room for forming start-ups or demonstrating other forms of independent behavior. The most prestigious jobs tend to be in large companies, where being politic is essential.

The contrasts with the vendor world couldn't be more stark. When the young Bill Gates decided to drop out of Harvard, I doubt he spent much time debating whether to start Microsoft or join, for example, Citibank and become an early PC evangelist. Ditto for the scores of other IT entrepreneurs who

have thrived on the vendor side and never spent a day in the customer world. They wanted the freedom to do their own thing and pursue their own dreams.

If all this seems a bit mundane, consider that few other industries seem to work this way. In what other sector do people of comparable expertise make such a fundamental career split, and do it in roughly equal numbers? It would be like having half of all doctors going to work for medical supply companies. While the split between accountants who work in-house and those at external accounting firms might seem to be another example, that situation has more to do with two types of employers competing for resources than it is about two entirely different ways of making a living.

The ramifications of all of this are greater than you might think. Internal IT professionals are often accused of lacking business vision and acumen and of being too cautious and risk-averse. While to some extent effective IT organizations need to be this way, it also seems clear that many of the most restless, entrepreneurial and daring IT professionals probably never went into the customer side of the business to begin with. This suggests that there may well be a deep-rooted reality behind what is often seen as an unfair stereotype.

It also helps explain why customers and vendors often struggle to get along with each other. It's not just the typical tension between buyers and sellers; rather, the leaders of each group have fundamentally different attitudes, values and concerns. In more ways than you might initially think, vendors really are from Mars, and users are from Venus. **49488**

PIMM FOX

Worrying About Election Day

U.S. ELECTIONS tend to confound most foreigners. They find it strange that our politicians crisscross the country, kiss babies and eat apple pie, all while donning a wide variety of headgear.

But of course, what they truly can't understand is how we have managed to screw up the actual voting process.

We can't even seem to count correctly. How is it possible that a nation that is able to debate the role of Moore's Law, demand overnight delivery of books and CDs ordered online and simulate nuclear blasts with a computer can't produce a tamperproof system to count votes?

Paper ballots were in widespread use until the 1890s, when the mechanical-lever system started to come into service. The machines, widely adopted in the 1930s, were supposed to be accurate and provide privacy, with voters making their selections behind a curtain. When the lever was moved, the vote was recorded and tallied.

But it was soon discovered that the counting of votes was subject to fraud. Thereby hangs the tale of the chad. Punch-card systems were introduced to prevent fraud and make the count more accurate. But the 2000 presidential vote produced so many disputes, particularly in Florida, that Congress decided to spend about $4 billion to upgrade voting systems.

Passage of the Help America Vote Act of 2002 was supposed to usher in an era of secure, reliable, computer-based vote tallying. The direct-recording electronic systems were to replace punch cards, optical scanner ballots and hand-counted paper ballots.

Well, it is sad to say that with the election just five weeks away, about one-third of the 150 million registered voters will be using machines that are still basically in beta mode, and that most of the money that was supposed to go to building and testing the machines hasn't been spent.

In California, the certification of the electronic voting machines has flip-flopped twice. They are going to be available, but voters who prefer to use a paper ballot can still do so.

In Maryland, the new electronic machines made by Diebold Election Systems use a Microsoft operating system, and security flaws were found when an independent lab tested the machines. The issue of voter fraud is such a big deal that both the Democrats and the Republicans have lined up teams of lawyers to challenge the vote counts in close elections.

In Nevada, the electronic touch-screen system from Sequoia Voting Systems also produces a paper record that can be checked. But other states, such as Kentucky, Delaware and Tennessee, received a failing grade from the Free Congress Foundation on their ability to accurately rely on electronic vote processing. New Mexico got a D-minus, and if that gives you the shakes, Florida snagged an F-plus. Ohio's system was so flawed that the secretary of state stopped an upgrade from the good old punch-card system because of security concerns.

In 2003, the six largest electronic voting machine vendors — Advanced Voting Solutions, Diebold, Election Systems & Software, Hart InterCivic, Sequoia and UniLect — formed the Election Technology Council.

But according to a report on the nonpartisan Web site Electionline.org, produced by the Election Reform Information Project and devoted to providing information about voter reform in the U.S., the group hasn't really done all that much except issue press releases. And, says Electionline.org, the links between the vendors, political parties and state election officials are both financial and personal.

Clearly, there is a lot of work yet to be done. **49549**

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READERS' LETTERS

Fixing the Vote

SHARON MACHLIS' column "A Voter's Paper Trail" [QuickLink 47905] leads to one question: If you can't trust the machine to correctly record your e-vote, how can you trust that the paper receipt correctly shows the e-vote that was recorded? With ATMs and gasoline pumps, users get an immediate receipt, but they also get a monthly statement. With a secret e-ballot, there is no follow-up accounting statement. I believe the best approach to make the voting machine trustworthy is through use of open-source code, digital code signatures, machine programming with ROM cartridges (like common video game sets), public-key certificates for authentication, and open interface standards so that authentication from multiple vendors is possible. But this still wouldn't provide the level of trust commensurate with a paper ballot.

Punch-card technology is fairly well developed. While it's true that Florida experienced chad problems, this could be fixed by having the electronic voting machine punch the ballot. The voter could immediately verify the punches, and the punched card would be retained for possible manual recounting. This approach would provide all the convenience of an electronic-voting user interface with the highest level of trust provided by the paper ballot.

Robert S. Baron
USAISEC, Enterprise Systems Engineering Directorate, Fort Huachuca, Ariz.

Terror Response

WHILE THERE may not be one technological solution to catching terrorists, it's shortsighted and self-defeating to assume that technology will not improve and help in the effort proportionally ["Technology Not the Answer to Terror," QuickLink 48705]. Various forms of biometric identification can be defeated individually, but the more seamless and redundant the barriers, the more effective the prevention. And that's where technological improvement plays its part.

Fred Leo
Atlanta

A Secure India

I WORK FOR ONE of the software development giants in India to which a lot of IT work is outsourced by companies in America and worldwide. In reading the article "Securing the Corporation" [QuickLink 48285], I felt that the CSOs interviewed were highly biased against non-Americans. Indian IT companies have very strong process frameworks and business ethics. The information available to one team working for a particular client isn't available to another team working for another client and sitting in the adjacent cubicle. Security, confidentiality and integrity of client data are our top priorities. A couple of the CSOs suggested code reviews. In my company, the average bugs present in the software at the first internal reviews is 10%, which is way below the industry standard, and the cost of quality is around 40%, whereas the industry standard is 25%. And no, this cost of quality is not charged to the client but is absorbed by the organization.

Mukul Dharwadkar
Technical analyst, Bangalore, India,
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COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 1 Speen Street, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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CASE STUDY
Recollecting the Customer
A three-year effort to create a unified information architecture at ING Americas begins to pay dividends in the form of a single view of customer activity. **Page 34**

SECURITY MANAGER'S JOURNAL
IP Telephony Changes Security Equation
His company wants to save money by using IP telephony, but Mathias Thurman must sort out the ramifications of running voice traffic over its LANs and WANs. **Page 36**

OPINION
The Need to Know What We're Missing
Spam and pornography have made Internet filtering essential, but users in a transparent enterprise should know what's being filtered, says Daniel J. Weitzner. **Page 36**

ETRADE Beats the Clock

The online brokerage built its systems around open-source to support its two-second trade guarantee. **BY GARY H. ANTHES**

FIELD REPORT

ETRADE FINANCIAL Corp. and other online stock brokerages are at war over how fast they can execute a trade. Ameritrade Holding Corp. kicked off the execution promise game in 2001 by guaranteeing a turnaround of 10 seconds or less. ETrade countered with a nine-second guarantee, and since then it has all been downhill.

Last year, Ameritrade promised to complete trades within five seconds, and in March, ETrade lowered its pledge to two seconds.

ETrade declines to say how many of its trades fail to complete in two seconds, but a spokeswoman says it will forgo less than $1 million in trading commissions this year as a result of the guarantee. The company collected $191 million in commissions in the first six months of this year.

ETrade has 3.5 million customer accounts and completes more than 100,000 trades each day, on average. The company says most of its trades are completed in less than a second, a remarkable achievement for a complex operation that spans multiple computers, routers and applications, not all of them controlled by ETrade.

"ETrade has a sophisticated infrastructure," says Tim Carpenter, senior brokerage analyst at GomezPro, an Internet performance management company recently acquired by Watchfire Corp. in Waltham, Mass. "They are not bogged down by trying to integrate with a legacy infrastructure, like an older broker that moved from the offline world to the online world. They didn't have to make concessions."

Excess Capacity Cheap

The company has gone through several major IT overhauls since 1996, when it began Internet-based trading. The most important transition, one that is still going on, has been a cutover from proprietary products to open-source components — principally Apache Web server software, Tomcat application server software and the Linux operating system (see diagram). The move from Sun Solaris/Sparc to Linux/Intel at the top two layers of the three-tiered architecture, in particular, made for a whole new economic ballgame for ETrade.

In 2001, the cost of proprietary systems was rising while the cost of open systems running on Intel processors was falling, says Joshua S. Levine, ETrade's chief technology and administrative officer. "And it wasn't just the price of the chip; it was memory, peripherals, everything. We said, 'If we stay on a proprietary architecture, we'll always be trapped by the rising price of proprietary vendor equipment.'"

With the savings from open-source

products enjoy the luxury of being able to overprovision by buying spare capacity for every conceivable hardware failure and spike in demand. "When you are buying servers so cheaply, the concept of 'capacity' drops away," Levine says. "We buy a machine for $3,900, and we don't even buy maintenance on it. When it fails, we throw it away."

ETrade's three-tiered architecture includes a server farm, which it continues to build out horizontally, with 700 Linux Intel boxes running most of the time at some small fraction of their capacity. Making that work, and making it easy to add more boxes, requires software that can move the workload around and the ability to swap out failed servers, in real time. ETrade uses load-balancing software from Resonate Inc., but is migrating to a similar tool from NetScaler Inc. that it says is faster.

Those products load-balance within an application, so if trade routing needs more horsepower or encounters a hardware failure, for example, that's addressed automatically and immediately. ETrade is now looking at ways to create a virtualized server farm for use by multiple applications. "How do you jump-start or repurpose a server?" says Hartley Caldwell, vice president of re-engineering. "We are thinking about that in the future."

The Right Routes

An ETrade customer may connect to the Internet over one path. But ETrade then finds the best route back to the customer using Adaptive Networking Software from San Mateo, Calif.-based RouteScience Technologies Inc., which can adjust traffic in subseconds to meet user-specified policies about application availability, performance and network usage. Route adjustments are made using open-standard application programming interfaces on routers and other network devices.

"It's a common myth that you can't manage the Internet," says Lloyd Taylor, technology vice president at Keynote Systems Corp. "Using the proper measurements, and understanding how routing works and working on your providers, you can actually control a good portion of the performance."

The move to Linux Intel servers reduced trade times 30% and enabled the nine-second trade guarantee. Getting down to two seconds required other moves, including bringing ETrade's system for routing — moving trade orders to the proper exchange and bringing back confirmations — in-house.

ETrade was using a third-party service, but it saw that it could improve reliability and speed by developing its own routing software. Its internal system, RoutX, eliminated route hops and optimized the software, Levine says.

Extreme Measures

Gomez Inc. and Keynote both monitor ETrade Internet activity continuously. Keynote sends test transaction suites every few minutes from each of 20 locations around the U.S. and reports the results to ETrade every 15 minutes.

Says Caldwell, "Every morning we review the previous day's operations and the coming day's operations with the operational staff around the world. What was the customer's experience, how many million hits did we have, how many Web errors did we have, were they customer Web errors, did our load-balancing solution remove them in time, and so on."

Greg Framke, an executive vice president and head of IT at ETrade, says, "We have developed a rigor around performance and availability that has really made a big difference. Measuring reliability and performance is almost a cult with us."

At the middle layer of the three-tiered trading system, ETrade runs BEA Systems Inc.'s Tuxedo transaction manager, and that could be the next target for the company's move to open-source, Levine says. "We are very interested in Java Message Service — JMS," he says.

The move to JMS would be straightforward, and its benefits would be primarily economic, according to Caldwell. "Tuxedo is fairly expensive on a per-CPU basis," he explains.

While the top two tiers of the trading and routing systems run on Linux, the Sybase database layer remains on Sun Spare systems running Solaris. A move to Sybase on Linux is possible, but that would require a significant system redesign and have an uncertain operational impact, Caldwell says.

Rather than making an intermediate move to Sybase on Linux, Framke says ETrade could go to a grid database concept in which data is cached at various points up and down the application stack. "If I could put data closer to the user, I could serve it up faster," he says.

That could improve availability as well. "If you look at the way we have architected our front end, it is rare — a very rare event — to have a user who couldn't on the second click get to where they were going," Framke adds. "And that's what I want in the database."

Watchfire's Carpenter says that many ETrade customers are not concerned about a few seconds of trade execution time. But for "active traders" — those making hundreds or thousands of trades a year — "execution quality and speed are of the utmost importance."

Says Levine, "What I'm most proud of is that we operate at 100% every day, 24 hours a day. And it's out there for everyone to see if you have a failure. I mean, my career could end right now with a three-hour outage." 49201

Inside ETrade's Data Center

PERFORMANCE and reliability aren't just about computer hardware and software; IT assets must be protected.

That was one of the priorities when ETrade built its regional operations center during the stock market boom of 1999. Speed was another. "There were heady days for companies like ETrade," says Greg Framke, an executive vice president and head of IT at ETrade. "Companies could barely keep up with demand. The NOC was built in less than 12 months."

ETrade's main data center, the $30 million (excluding the computer gear) regional operations center is an unmarked, windowless concrete fortress in Alpharetta, Ga.

The facility is classified as a "Tier IV - Fault Tolerant" data center, with two independent electrical systems, multiple power and cooling distribution paths, redundant components and 100 [illegible] availability.

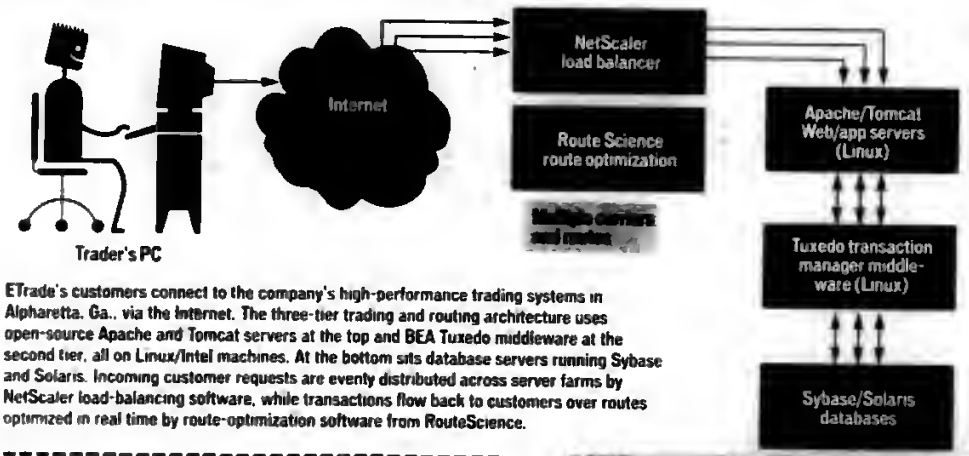
Six telecommunications carriers have pipes into the building, and there are three electrical feeds to the data center. Two rooms each house a pair of 600-ton chillers, and a million-gallon tank of cold water can supply cooling if a chiller fails.

The center has four generators running [illegible] power supply units, any one of which can fail with no appreciable impact. Two other rooms each house a pair of redundant, 2-megawatt diesel generators. Nearby is a 200,000-gallon tank of diesel fuel — enough to power the data center for two weeks.

Security is tight. There are closed-circuit TV monitors, doors are equipped with badge readers, and a fingerprint-recognition system controls access to the computer room.

— Gary H. Anthes

ANATOMY OF A TRADE



ETrade's customers connect to the company's high-performance trading systems in Alpharetta, Ga., via the Internet. The three-tier trading and routing architecture uses open-source Apache and Tomcat servers at the top and BEA Tuxedo middleware at the second tier, all on Linux/Intel machines. At the bottom sits database servers running Sybase and Solaris. Incoming customer requests are evenly distributed across server farms by NetScaler load-balancing software, while transactions flow back to customers over routes optimized in real time by route-optimization software from RouteScience.

A BRIEF HISTORY OF ETRADE

How the company - and its technology - have evolved

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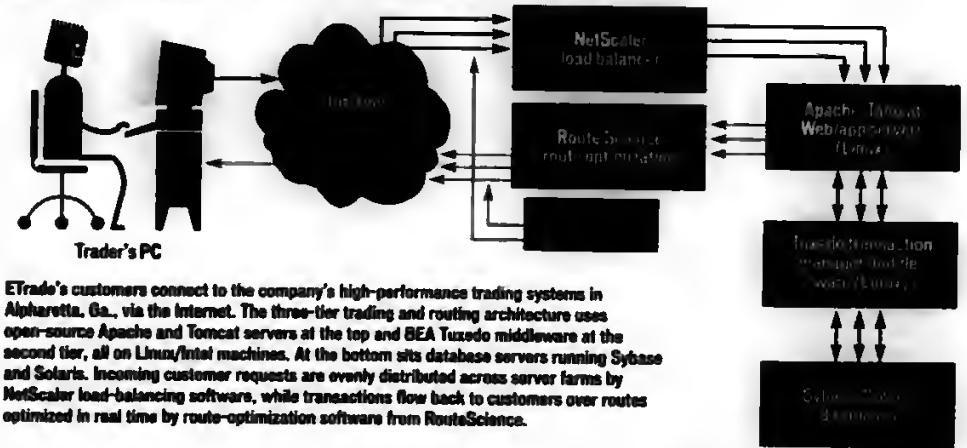

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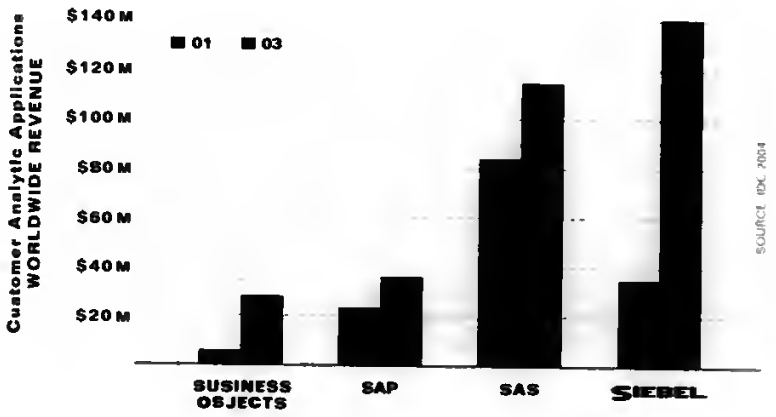

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THE GRAND CHALLENGES OF IT

Researchers are inventing new ways to tackle old problems.

BY THOMAS HOFFMAN

FUTURE WATCH

FUNDAMENTAL RESEARCH on how to make computer hardware more powerful and software smarter goes back 50 years or more, but many of the traditional methods have nearly reached their limits. Now, researchers moving in bold new directions may be setting the course of IT for decades to come.

There are literally dozens of grand challenges that scientists and economists are attacking, ranging from societal issues to technical advances. Here, we take a look at the challenges in three key areas of IT research: processor performance, chip miniaturization and artificial intelligence.

Processor Performance

In 1965, Gordon Moore, a co-founder of Intel Corp., observed that the transistor density of semiconductor chips doubled every 18 to 24 months, as new PCs are roughly twice as powerful as their predecessors. Most researchers expect Moore's Law to hold true for at least another 10 years.

But processor performance is reaching its limits, especially in terms of the amount of power that's dissipated by transistors. "As Moore's Law has gone along, it becomes harder and harder to get devices to work at very small scales using CMOS," says Phil Kuekes, senior computer architect in quantum sciences research at HP Labs in Palo Alto, Calif.

It's becoming increasingly difficult to cool chips economically, says Bijan Davari, an IBM fellow and vice president of next-generation computing at IBM's Thomas J. Watson Research Center in Yorktown Heights, N.Y. The power-density limitation for air-cooled processors is on the order of 100 watts per square centimeter of chip area, says Davari, "and it gets a lot more expensive to inject liquid into the backside of a chip, which could permit cooling to about twice that power density."

Depending on voltage ranges and other factors, Itanium and Pentium 4 chips burn 100 to 150 watts of power, Davari adds. "For future processors, we'd like to reduce the power dissipation into tens of watts per processor core, and more importantly, we need to contain the power density, or power dissipation per unit area," he says.

Given those restrictions, researchers are now focusing on new approaches to improving processor performance, such as placing multiple processor cores on a single chip, in addition to taking new approaches to chip architecture and design.

For example, IBM is evaluating – and in some cases already implementing – the use of new materials on a chip, such as copper, silicon-on-insulator and silicon germanium, to improve the performance of devices, lower the power density or provide a combination of the two. In addition, the materials allow researchers to fabricate smaller chips that consume less power, Davari says.

And at Austin-based Sematech Inc., researchers are working with so-called low-k materials, which allow metal circuits to be packed closer together on a chip with less risk of electrical signal leakage, says Randy Goodall, associate director of the International Sematech Manufacturing Initiative.

To help increase power dissipation, IBM is testing cooling gels that would prevent hot spots on a chip. IBM is also looking into the potential for water-cooled microprocessors, says Davari.

To help improve bandwidth inside chips, researchers at MIT are working on an effort called the Raw Architecture Workstation Project, where multiple "adders and subtractors" are placed throughout the chip along with storage to provide "neighborhoods of processing, rather than traversing the entire chip to move data," says Anant Agarwal, a professor in electrical engineering and computer science at MIT. "It's like going to a grocery store closest to me rather than going across the county."

Meanwhile, researchers at Los Alamos National Laboratory in New Mexico and elsewhere are developing parallel processing systems that would employ tens of thousands of processors and deliver up to 1,000 trillion floating-point operations per second of performance by as early as 2008.

David Patterson, a professor at computer science at the University at California, Berkeley, says he believes researchers will be able to double the number of processors they can place on a single chip every three to four years. "But that's predicated on the amount of software that can make use of it," he warns.

"Programming big parallel computers to exploit their potential has been the show-stopper," says Burton Smith, chief scientist at Cray Inc. in Seattle. "As computers grow from hundreds of processors to tens of thousands of processors in the next few years, this problem is going to increase dramatically."

Cray, IBM and Sun Microsystems Inc. are developing parallel programming languages. Smith says he expects that Cray will make its parallel programming language, called Chapel, available in an open-source version in 2005.

The Blue Mountain supercomputer at Los Alamos, built by the Cray unit of Silicon Graphics, was one of the fastest in the world when it was installed in 1998. It is now giving way to an even faster machine.

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Conference At-a-Glance *(subject to change)*

For details, updates, and to register visit **www.snwusa.com/cw**

MONDAY, OCTOBER 25

9:30am to 10:25am

INDUSTRY PRIMER TRACK
Addressing High Density Cooling of Storage Networking Equipment at the Facility Level
Donald Beaty, Founder & President, DLB Associates

INDUSTRY PRIMER TRACK
Storage Basics and Trends
Dennis Martin, Senior Analyst, and Greg Schulz, Senior Analyst, Evaluator Group

CAREER DEVELOPMENT TRACK
Power Statements, Questions and Answers Techniques
Howard Goldstein, Founder, Howard Goldstein Associates, Inc.

10:35am to 11:30am

Role of Server Blades and Virtualization in Next Generation Data Center
Arun Taneja, Founder and Consulting Analyst, Taneja Group

Why Tape Continues to Make the Grade
Richard Harada, President, Tape Technology Council

Communication Skills for the IT Techie
Bill Peldzus, Director of Storage Architecture, GlassHouse Technologies

11:30am to 1:00pm Luncheon

Afternoon

SNIA Tutorial Sessions
1:00pm to 5:40pm

- **Data Lifecycle**
- **Virtualization & Securing Your Storage**
- **Focus on Networking Your Storage**
- **Focus on Storage**
- **SAN Management**
- **Voice of the User**

SNIA

IDC Briefing Session
1:00pm to 4:00pm

IDC

In this fast paced session, IDC's top storage analysts will examine companies' growing interest in deploying tiered storage solutions and assess its impact on storage components, systems, networks, management and services.

IT End-User Golf Outing
noon to approximately 6:00pm

The pre-conference golf outing at the Ritz-Carlton Golf Club located adjacent to the JW Marriott Grande Lakes Resort is complimentary (a $125 value) for registered IT end-users. (Other participants, including sponsors and vendor representatives, may play on an "as available" basis and are responsible for all applicable golf outing expenses.)

SPONSORED BY **Quantum**

To secure your spot, contact Michael Meleady at 1-508-820-8528.

7:00pm to 9:00pm Welcome Reception

SNIA

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TUESDAY, OCTOBER 26 *General Sessions Begin*

8:30am to 9:15am — **Don Tapscott, Renowned Bestselling Author of *The Naked Corporation, Growing Up Digital* and *Paradigm Shift***

9:15am to 9:45am — **The Future of Knowledge Management**

9:45am to 10:15am — **Kevin Rollins, President & CEO, Dell**

10:30am to 11:00am — **Keith Glannan, VP & CIO, Northrop Grumman IT**

11:00am to 11:30am — **Elevating the Art of Storage**

11:30am to noon — **Industry Presidents' Roundtable: A Market Outlook**
Moderator: Don Tapscott, Author of *The Naked Corporation, Growing Up Digital* and *Paradigm Shift*

12:15pm to 1:30pm — CONCURRENT LUNCHEON SESSIONS

General Networking Luncheon
On the Valencia Lawn

Luncheon Session
Steve Duplessie, Founder & Senior Analyst, Enterprise Storage Group

Measuring the Value of IT Investments
Richard Snieder, Managing Partner, InterUnity Group

Storage and More: Is Convergence Ahead?
Networking, security and storage pros discuss their technology roadmaps, spending plans and vendor relationships.
Ken Male, CEO & Founder, TheInfoPro (TIP)

1:30pm to 2:00pm — **End User Case Study: Best Practices: Data Center Consolidation**

2:00pm to 2:30pm — **Greg Reyes, Chairman & CEO, Brocade Communications Systems**

2:30pm to 3:00pm — **End User Case Study: Evaluating Options for Business Continuity/Disaster Recovery Plans**

3:00pm to 3:45pm — **CTO Insights Panel**
Moderator: Jon William Toigo, CEO & Founder, Toigo Partners International

4:00pm to 5:30pm — CONCURRENT SESSIONS

5:30pm to 8:30pm — Expo with Dinner / Interoperability & Solutions Demo Open — 5:30pm to 8:30pm

WEDNESDAY, OCTOBER 27

8:30am to 9:15am — **Nick Carr, former Executive Editor of the Harvard Business Review and author of *Does IT Matter?***

9:15am to 9:45am — **End User Case Study**

9:45am to 10:15am — **Industry Leader Presentation**

10:30am to 11:00am — **End User Case Study: Realizing the Vision of Management Simplicity and Improved Business Processes in a Demanding, Distributed, High-Performance Environment**
Michael Prince, VP & CIO, Burlington Coat Factory

11:00am to 11:30am — **The Half-Life of Storage Trends**
Peter Yarrow, Chairman & CEO, ADIC

11:30am to 12:15pm — **Panel: End Users Speak Out**
Moderator: Dix Editor in Chief, Network World

12:15pm to 1:45pm — Expo & Luncheon

1:45pm to 2:15pm — **End User Case Study**

2:15pm to 2:45pm — **Industry Leader Presentation**

2:45pm to 3:30pm — **Analyst Roundtable Panel**
Moderator: Jon William Toigo, CEO & Founder, Toigo Partners International

3:45pm to 5:15pm — CONCURRENT SESSIONS

5:15pm to 7:15pm — Expo and Reception

7:30pm to 9:00pm — Gala Evening, Dinner and Entertainment

INTEROPERABILITY & SOLUTIONS DEMO OPEN

See SNW's Interoperability & Solutions Demo
40-plus SNIA member companies collaborating on integrated solutions the opportunity to meet leading experts and engineers

THURSDAY, OCTOBER 28

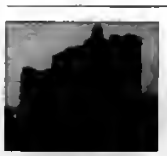
7:30am to 8:30am — Breakfast

8:30am to Noon — CONCURRENT TECHNICAL & BUSINESS TUTORIALS

Noon — Conference Concludes

"... SNW is a great venue for peer discussion ... an opportunity to provide feedback to vendors on what users need from them ... I sat down with my key vendors and shared information ..."

John Greer
Director, IT Infrastructura
Pacific Gas & Electric



JW Marriott Grande Lakes Resort
Orlando, Florida

Hotel Reservations and Travel Services

IDG Travel is the official travel company for Storage Networking World. They are your one stop shop for exclusive discounted rates on hotel accommodations.

To reserve your accommodations visit
www.etcentral.com

You can also call our conference housing line at
1-800-340-2262 (or 1-508-820-8686)

SNIA

STORAGE NETWORKING WORLD

COMPUTERWORLD

October 25-28, 2004
JW Marriott
Grande Lakes Resort
Orlando, Florida

Application for Conference Registration

Fax this completed application to 1-508-820-8254 or apply online at: www.snwusa.com/cw

Your business card is **REQUIRED** to process your application

Questions? Call 1-800-883-9090

If not indicated on your business card, please provide the following required information:

Corporate E-mail Address _____

Corporate Website _____

Registration questions?
Call 1 800 883 9090 or email snwreg@computerworld.com

Need accommodations?
Reserve them at **www.etcentral.com**
Please call 1 800 340 2262
or email eventhousing@idg.com

Please check ONE of the following:	Earlybird Registration (through September 14 2004)	Full/Onsite Registration (after September 14 2004)
❑ **I am an IT End-User*** (Complete Attendee Profile below)	❑ **$695** General Conference Package (October 26 & 27) (includes General Conference Sessions, Expo, Meals & Receptions) ❑ **$1,290** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test-Ready" Courses)	❑ **$1,295** General Conference Package (includes General Conference Sessions, Expo, Meals & Receptions) ❑ **$1,690** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test-Ready" Courses)
❑ **I am a Channel Partner/ Integrator/Consultant** (Complete Attendee Profile below)	❑ **$3,000** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test-Ready" Courses)	❑ **$3,300** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test-Ready" Courses)

* IT End-Users are defined as those who are attending Storage Networking World with an intent (and an IT spending budget) to potentially buy/lease hardware/software/services etc. from our conference sponsors and are not themselves an IT vendor. As such, account representatives, business development personnel, resellers, consultants and anyone else attending who does not have IT purchasing influence within their organization are excluded from the "IT End-User" designation. Interpretation and enforcement of this policy are at the sole discretion of Computerworld.

By participating in SNW's Channel Partner/Integrator registration package, registrants may enjoy the following benefits: One company representative may receive a full conference pass to SNW Fall 2004; additional company representatives pay $695 each for full conference passes; company may invite up to five IT User customers to attend SNW Fall (IT Users must be strictly compliant with IT User definition on the supplied registration form); companies registering for this package interested in joining the SNIA are eligible to receive a $2,000 discount, provided that membership is applied for prior to January 1 2005.

Attendee Profile: This section MUST be completed by IT End Users and Channel Partners/Integrators/Consultants only (optional for all other registrations) in order to process your application.

Your Business/Industry
- ❑ Transportation, Utilities
- ❑ Mining/Oil/Gas
- ❑ Non-Profit/Trade Association
- ❑ Media, Publishing
- ❑ Banking
- ❑ Finance
- ❑ Accounting
- ❑ Insurance
- ❑ Real Estate
- ❑ Telecommunications
- ❑ Wholesale, Retail (non-computer)
- ❑ Computer Service Provider
- ❑ Advertising/Marketing/Public Relations
- ❑ Entertainment
- ❑ Education
- ❑ Food Industry
- ❑ Government/Military
- ❑ Healthcare/Medical Services
- ❑ Travel/Hospitality/Recreation
- ❑ Manufacturing (non-IT)
- ❑ VAR/VAD/ASP/System Integrator (Channel/Integrator/Consultants Only)
- ❑ Industry Consultant/Storage Solution Integrator (Channel/Integrator/Consultants Only)
- ❑ Manufacturing (IT) (Channel/Integrator/Consultants Only)
- ❑ Computer Reseller/Dealer/Wholesaler (Channel/Integrator/Consultants Only)
- ❑ Software Development (Storage) (Channel/Integrator/Consultants Only)
- ❑ Other Computer-Related Storage (Channel/Integrator/Consultants Only)
- ❑ Other

Your Job Title/Function
- ❑ CEO/COO (Chairman/President)
- ❑ CIO (CTO)
- ❑ VP/GM/Director
- ❑ IS/IT Director/Manager
- ❑ Other IS/IT Department Manager/Supervisor
- ❑ Other Corporate Business Manager
- ❑ CEO/COO (Chairman/President) (Channel/Integrator/Consultants Only)
- ❑ CFO/Controller/Treasurer (Channel/Integrator/Consultants Only)
- ❑ VP/GM/Director (Channel/Integrator/Consultants Only)
- ❑ Sales, Marketing/Product Staff (Channel/Integrator/Consultants Only)
- ❑ CIO/CTO/Other IS/IT Manager (Channel/Integrator/Consultants Only)
- ❑ Engineering Staff (Channel/Integrator/Consultants Only)

The one item that best describes your involvement in the IT purchase process
- ❑ Authorize the purchase
- ❑ Approve the budget
- ❑ Influence the purchase
- ❑ Evaluate/recommend products/brands, vendors
- ❑ Identify/establish the need to purchase
- ❑ All of the above

Number of employees in your entire organization (ALL locations)
- ❑ Over 10,000
- ❑ 5,000 - 9,999
- ❑ 1,000 - 4,999
- ❑ 500 - 999
- ❑ Less than 500

What is the estimated annual revenue of your entire organization?
- ❑ Over $1 Billion
- ❑ $1 Billion - $9.9 Billion
- ❑ $500 Million - $999 Million
- ❑ $100 Million - $499 Million
- ❑ Less than $100 Million

Your organization's annual IT/IS budget for all IT/IS products, or if you are a Channel/Integrator Partner or Consultant, what is the annual dollar value of IT products/services you sell/resell/recommend/influence for purchase by your customers/clients.
- ❑ Over $1 Billion
- ❑ $500 Million - $999 Million
- ❑ $100 Million - $499 Million
- ❑ $10 Million - $99 Million
- ❑ $1 Million - $9.9 Million
- ❑ Less than $1 Million

Annual company IT budget (storage products and services)
- ❑ Over $1 Billion
- ❑ $500 Million - $999 Million
- ❑ $100 Million - $499 Million
- ❑ $10 Million - $99 Million
- ❑ $1 Million - $9.9 Million
- ❑ Less than $1 Million

Would you like to receive information about playing in the golf outing on Monday, October 25th?
- ❑ Yes
- ❑ No

❑ **My company is Sponsoring/ Exhibiting at SNW**	❑ **$695** (through September 14 2004) General Conference Package (October 26 & 27) (includes General Conference Sessions, Expo, Meals & Receptions) ❑ **$1,290** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test Ready" Courses)	❑ **$1,295** (after September 14 2004) General Conference Package (October 26 & 27) (includes General Conference Sessions, Expo, Meals & Receptions) ❑ **$1,690** Total 4-Day Package (October 25, 26, 27, 28) (includes General Conference, plus Technical and Business Tracks, SNIA-produced Tutorials, SNIA Certification "Test Ready" Courses)

As a sponsor, you may be eligible to attend using a registration provided with your sponsorship. (If those registrations have already been assigned/used, then you may register at the prevailing rates above.) See the current list of sponsors at www.snwusa.com. Questions? Call 1 800 883 9090 or email snwreg@computerworld.com

❑ **I am a representative of a Non-Sponsoring IT Vendor Company**

❑ **$5,000 Business Development Professional Package** for Sales, Marketing and Business Development Professionals (includes General Conference Sessions, Expo, Meals & Receptions)

Vendors are encouraged to participate in Storage Networking World through sponsorship. (Details are available by calling Ann Harris at 508-820-8667.) Alternatively, vendors (as well as other "non-IT end-user" professionals as defined by Computerworld) may apply for registration at the "non-sponsoring vendor" rate of $5,000. Determination of what constitutes a "non-sponsoring vendor" registration is made exclusively by Computerworld. Please call 888-239-4505 with questions.

❑ **I am a Financial/Equity Analyst and/or Venture Capital Professional**

❑ **$1,290** (through September 14 2004) General Conference Package (includes General Conference Sessions, Expo, Meals & Receptions)

❑ **$1,690** (after September 14 2004) General Conference Package (includes General Conference Sessions, Expo, Meals & Receptions)

❑ **I am a qualified member of the press.** I can verify my press credentials.
Press should call Erin Keefe at 1-781-915-5009 to register.

Please fax this completed application to 1-508-820-8254

Payment Method

❑ **Check** (checks must be received by October 5, 2004, payable to: Computerworld)
Mail to: Computerworld, Attn: Pam Maingowski, 500 Old Connecticut Path, Framingham, MA 01701

❑ **American Express** ❑ **VISA** ❑ **MasterCard**

Account Number _____

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Cancellation Policy (All of the following require **written notification** by October 5, 2004.)
In the event of cancellation, the registrant has three options:
1) He or she may substitute another attendee for this conference.
2) He or she may transfer this registration to the Storage Networking World Spring 2005 conference.
3) The registration fee will be refunded, less a $250 service charge, if written notice is received by October 5, 2004.

Please send cancellation requests via email to: snwreg@computerworld.com

Chip Miniaturization

Today, chips can be made with features as small as 70 to 90 nanometers wide, with hundreds of millions of transistors on them.

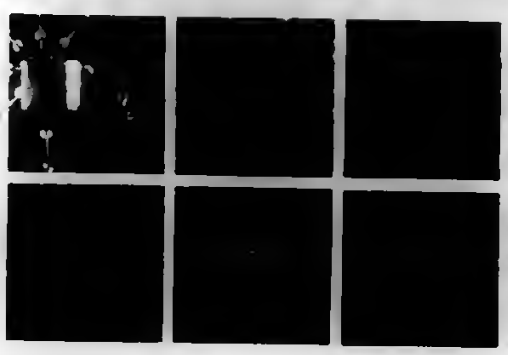
Last year, HP Labs developed a 64-bit RAM that sits on a single square micron, says Phil Kuekes.

One way to deal with the heat generated by ultradense circuits is to reduce the power supply voltage, says Anantha Chandrakasan, associate director of the Microsystems Technology Laboratories at MIT.

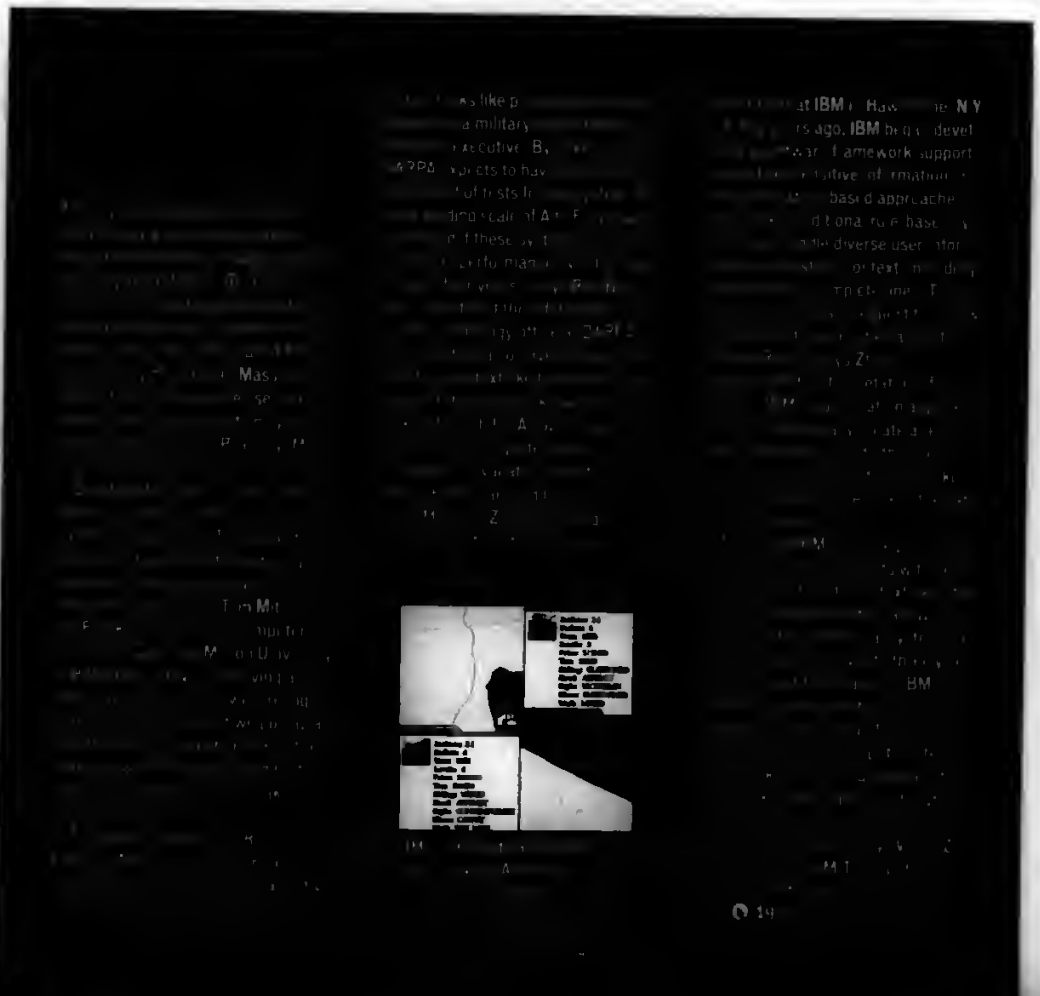
Over the past 10 years, designers have been able to create circuits that operate from 1-volt power supplies, and Chandrakasan says designers should reach the half-volt threshold within five years.

But in scale the power supplies down, the device thresholds must also scale down, which causes power leakage to exponentially increase, says Chandrakasan. To contend with these problems, he expects to see increased emphasis on gating the power supply – or cutting off the power supply network when the circuit is idle, using power switches on the chip die – and using multiple threshold devices to minimize power requirements.

Tom Theis, director of physical sciences at IBM Research, says he believes that further refinements in ultrathin silicon and ultrathin gate insulators could allow researchers to shrink device-channel lengths from roughly 45 nanometers today to 15 in 20 nanometers within 10 years. He also expects to see some high-performance chips dissipating at least 10 times the power of today's chips, as well as chips with 10 times the memory density of today's through the use of optical lithography tools that will arrive in 10 years.



HP has created a prototype of a 64-bit memory in one square micron of space – an area so tiny that more than 1,000 could fit on the end of a single strand of human hair. Each image is magnified 10 times more than the previous one. The first (upper left) shows the wafer on which 625 memories and their test structures were simultaneously imprinted.



Grand View

To Internet pioneer David Clark, the most pressing research challenge in IT is figuring out how to provide universal communications across the face of the earth.

"The grand challenges aren't about getting faster and measuring ourselves against some meter on the wall so that we're in line with Moore's Law," says Clark, a senior research scientist at MIT. "If you talk to users, they don't care about speeds – they care about things like ease of use, reliability and access," he adds.

To help provide global access to communications, Clark advocates several approaches, including the use of wireless technologies in developing nations that can't afford to install wireline networks, especially in sparsely populated regions.

"We don't need to get there with 100 megabits to the hovel – many of these people can't even read," Clark says. "The possibility for a lower-cost wireless infrastructure is the great hope."

– *Thomas Hoffman*

CLOSING THE GAP

Researchers are increasingly focusing their attention on technologies aimed at optimizing the edge of the network.

QuickLink 48383
www.computerworld.com

RECOLLECTING THE

By Thomas Hoffman and Lucas Mearian

CASE STUDY

WHEN THE stock market slumped in mid-2000, most financial services firms found themselves struggling to hold onto clients. ING was focused on selling them new products.

"Not only must large companies retain customers, but to increase revenues, they have to cross-sell to them more effectively," says Linda Marr, chief knowledge officer at Atlanta-based ING Americas, a division of Amsterdam-based ING Groep NV.

To help it draw upon customer data across multiple accounts more effectively, ING embarked on a massive data integration effort in July 2001 aimed at creating a series of database "hubs" that together form a unified information architecture for its seven U.S. business units, including reinsurance, pension plans and mutual funds.

"The hubs are for centrally structured data . . . enterprise value data that's commonly used across all lines of business, [including] customer information, agreement information and product information," says Chief Technology Officer Raymond Karrenbauer.

ING, which has 27 lines of business worldwide, has completed four hubs and has 10 more under construction. Those multiterabyte databases give business units a comprehensive, unified view of the customer. But Karrenbauer had two broader goals in mind: create a reusable architecture to drive costs down and mitigate risk.

To appreciate the immensity of this project, one needs only to walk into ING's project control room in Atlanta. Tacked along the walls are dozens of schematic diagrams that illustrate how the financial services firm is simplifying an incredibly complex IT environment. That system was created by a flurry of mergers and acquisitions that included the purchase of Barings PLC in 1995 and Aetna Financial Services Inc. in 2000.

ING began implementing its integrated data environment in May 2003. The structured data sits in a set of partitioned IBM DB2 Universal Database EEE databases. Key to the project is data-mapping software from Informatica Corp. in Redwood City, Calif., that allows ING to cross-reference customer information among databases at business units.

ING also uses data profiling software from San Francisco-based Evoke Software Corp. and ad hoc reporting and analytical tools from France-based Business Objects SA.

In just 11 months, ING's staff built an object-based database infrastructure that melds unstructured and structured data from 2,000 databases into one logical view of customer and operational information.

Now, when an ING call center agent pulls up a customer record in the new database, "it will retrieve the customer information from the structured data and then also provide any relative documents with that customer," says Karrenbauer.

says some projects have yielded an internal rate of return of over 100%.

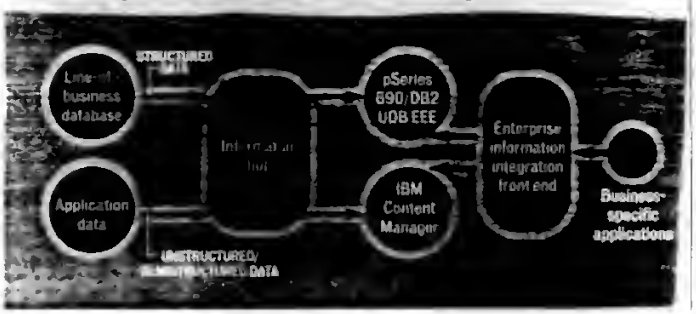
ING created DB2 repositories to aggregate a subset of structured data from each business unit's database that's of interest to the other business units. Along the way, the source data is funneled through a hub that conducts a series of transformation and deduplication steps.

Unstructured data sits in a separate repository. Sitting above that is an architectural layer that uses metadata to determine common traits between structured and unstructured data, says Karrenbauer. Some data is transferred in batch mode, but ING is piloting real-time, bidirectional data updates between the databases.

The source databases used by ING — which include Ingres, Sybase, SQL Server, Oracle and DB2 — remain in use for claims and statement processing, says Karrenbauer. Under the data integration effort, ING merely centralized some of the source data from these systems and classified it using common terminology so information can be shared across business units.

ING's Integrated Data Environment

ING collects customer data from an array of 2,000 databases scattered across 27 business units. Information from source databases is cleaned, transformed and deduplicated in the information hub before passing to the consolidated DB2 UDB EEE databases running on a pSeries 690 multiprocessor server. The new database gives ING's business divisions the ability to reuse customer data more effectively. Unstructured and semistructured application data is routed to the IBM Content Manager server where it is accessible based on metadata tags.



Avoiding Duplication

Karrenbauer places the hardware costs associated with each information hub at $2 million to $4 million, but he says some of the projects have yielded an internal rate of return in excess of 100% by avoiding project delivery duplication. That's because ING created a standardized project delivery model that can be repeated as each business unit pursues its own relational databases, according to Karrenbauer.

Although reusability leads to lower costs, "there's risk mitigation in taking this approach," he says. "If you did one-offs in each case, the risks are clearly higher."

And as other ING divisions in Brazil, Chile, Canada and the Netherlands apply the information-hub approach adopted by ING Americas as a template for their own data integration efforts, Karrenbauer estimates that they can reuse 50% to 65% of the IT architecture that his division created.

ING's efforts have won praise from industry observers. "I've seen other companies try to stitch together pieces of applications into new applications, but ING is a real leader in its formation of an integration competency center and its use of data services," says Philip Russom, an analyst at Cambridge, Mass.-based Forrester Research Inc.

Marr says the unified IT architecture is already paying off. For instance, she points to recently enacted antispam regulation that requires financial services companies to offer customers an e-mail opt-out option. By now having all of its customer information accessible from a single environment, she says, ING is about to comply with the regulation "while allowing us to continue to market to and support our customers." **48402**

MORE ONLINE

ING's Raymond Karrenbauer discusses the rationale for the database integration project, the benefits and his biggest challenge

QuickLink 48404
www.computerworld.com

RECOLLECTING THE CUSTOMER

ING Group's new unified information architecture pulls data from disparate business units' databases to create a unified view of customer activity. **By Thomas Hoffman and Lucas Mearian**

CASE STUDY

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And as other ING divisions in Brazil, Chile, Canada and the Netherlands apply the information-hub approach adopted by ING Americas as a template for their own data integration efforts, Karrenbauer estimates that they can reuse 50% to 65% of the IT architecture that his division created.

ING's efforts have woo praise from industry observers. "I've seen other companies try to stitch together pieces of applications into new applications, but ING is a real leader in its formation of an integration competency center and its use of data services," says Philip Russom, an analyst at Cambridge, Mass.-based Forrester Research Inc.

Marr says the unified IT architecture is already paying off. For instance, she points to recently enacted anti-spam regulation that requires financial services companies to offer customers an e-mail opt-out option. By now having all of its customer information accessible from a single environment, she says, ING is about to comply with the regulation "while allowing us to continue to market to and support our customers." **48402**

MORE ONLINE

ING's Raymond Karrenbauer discusses the rationale for the database integration project, the benefits and his biggest challenge.

QuickLink 48404
www.computerworld.com

McAfee

Imagine if McAfee could protect you from other threats the way it protects you from security threats

IP Telephony Changes Security Equation

Voice over IP presents challenges in protecting the corporate network. By Mathias Thurman

SECURITY MANAGER'S JOURNAL

IN AN EFFORT TO cut costs, my company has decided to migrate from private branch exchanges to IP telephony. By routing calls over our existing IP network and using voice-over-IP links, we can significantly cut our telecommunications costs, especially since we have significant telephone traffic between our U.S. offices and places like Europe and India, as well as other parts of Asia.

The bottom line, however, is that we'll have phones on our desks that are connected to the network. And that means securing the telephone network will become my problem.

The thought of IP traffic with voice traversing the network bothers me, since nur network isn't as secure as it could be. So I conducted an assessment of the major pieces of the IP telephony infrastructure. Since my exposure to IP telephony has been limited, I started by reading up on the technology. Most of the vulnerabilities discussed focused on the ability to either intercept network traffic or conduct impersonation attacks — manipulating a phone call so that it appears to come from someone else.

Since I didn't have a lot of time, I didn't focus on denial-of-service attacks, which we can address with our regular network gear. For example, we use Cisco network equipment, which includes several self-defense features within the operating system to address most DoS attacks. In addition, we will most likely deploy an all-in-one device to mitigate the threat posed by malicious code. Fortinet Inc. in Sunnyvale, Calif., has a very appealing product that we're considering deploying. This device not only addresses malicious code, but also supports firewall, VPN and intrusion detection and prevention functions.

To conduct my tests, I created a scaled-down version of the new IP telephony system. The setup included several IP phone models, a call management server and some networking gear. I started by testing the network over which the voice traffic must flow. I first attached my Linux laptop to an available Ethernet port to see what I could monitor using the free dsniff and ethercap tools.

Once I recorded some network traffic, I downloaded and compiled a tool called Voice Over Misconfigured Internet Telephnnes, which goes by the horrible acronym VOMIT. This program can take captured IP telephony packets and reassemble them into a form that you can play back over your computer's speakers. The IP phones from which I gathered the voice traffic don't support encryption, so I could easily play the conversations. Using handsets that encrypt traffic will be a requirement. We'll also require that IP telephony traffic be separate from our regular data traffic. We'll do this by creating separate virtual LANs on our network switches. By segregating the traffic in this way, we can thwart users oo the data VLAN from sniffing voice traffic.

> **The thought of IP traffic with voice traversing the network bothers me, since our network isn't as secure as it could be.**

In addition, we will add firewall rules that limit access to the critical IP telephony devices to only the required IP addresses. For example, if managers are oo a separate VLAN, we can craft rules that state that only certain users can obtain management access. We could further lock down the network by restricting the traffic so that only the IP phones can contact a manager.

Another aspect of IP telephony is the PC phone, or "soft phone," which lets any PC with a headset or microphone and speakers work like a regular telephone. Until we address desktop firewall and patch management issues, however, we'll restrict users from using these applications.

Integrity Check

Next on my agenda was to assess the integrity of the centralized communications server, or call manager, which sets up and manages phone calls. IP phones initiate a call by contacting this server. While the call manager plays a role in setting up calls, once the connection is established, the phone conversation occurs directly between the two IP phones over the switched IP network.

The communications server software we'll most likely use, Cisco CallManager, runs on Windows 2000 and Internet Information Server. That's not the ideal system fnr a critical infrastructure, hut Cisco claims that the Windows implementation has been hardened, that unneeded services have been disabled and that there is even a host-based intrusion-detection system installed on the server.

If I could hack into CallManager, I figured that I would own the entire phone system. For this test, I ran a combination of Nessus, a freely available port scanner, and WebInspect from SPI Dynamics Inc. in Atlanta tn conduct a comprehensive application-layer assessment. To my surprise, both assessments identified no critical vulnerabilities. Then again, my test represented an assessment for only a single point in time. More testing will be oeeded, and patching will be critical. As soon as Microsoft announces the oext Windows vulnerability, if the call managemeot server isn't patched, it may then be possible tn gain access to it.

Cisco and the vendors we approached all claim that they keep up with all patches and security issues and provide regular updates to the operating system and their software.

This was just my initial look at some of the main components of the IP telephony infrastructure. I still oeed to address DoS issues, and we have to take a hard look at the architecture of the entire IP telephony infrastructure. Several other tests we conducted provided a comfortable level of assurance that we can deploy a secure IP telephony system.

For now, it seems possible to deploy IP telephony in a secure manner with the proper architecture and planning — and by taking advantage of the available security configuration options of the devices.

WHAT DO YOU THINK?

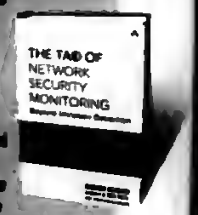
This week's journal is written by a real security manager, "Mathias Thurman," whose name and employer have been disguised for obvious reasons. Contact him at mathias_thurman@yahoo.com, or join the discussion in our forum: **QuickLink a1580**

To find a complete archive of our Security Manager's Journals, go online to **computerworld.com/managerjournal**

SECURITY LOG

Security Bookshelf

The Tao of Network Security Monitoring: Beyond Intrusion Detection, by Richard Bejtlich; Addison-Wesley Professional, July 2004.



This book is one of the most useful titles I've read this year. It offers a comprehensive review of intrusion detection and network monitoring. The author takes the reader from the basics of placement of network sensors through a comprehensive description of tools, many of which I had never even heard of. Bejtlich uses real-world examples to provide a clear understanding of network monitoring, intrusion detection and incident response.

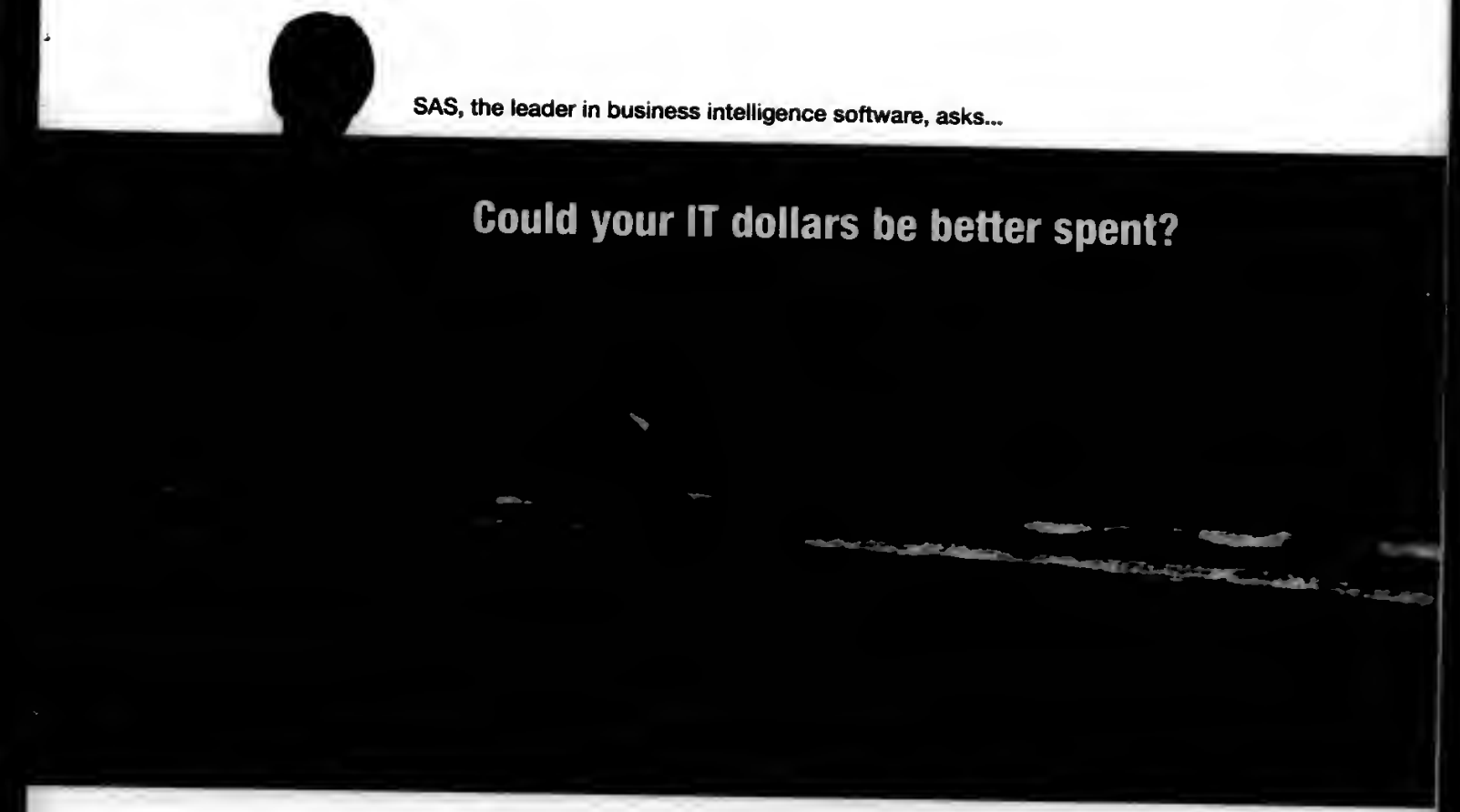
One aspect of the book I particularly appreciate is the discussion of real-world applications of some popular, freely available tools. Unfortunately, the book doesn't include a CD-ROM containing these tools, but the author does provide Web addresses where you can download the programs he discusses.

– Mathias Thurman

TCS Announces Trusted Linux

Trusted Computer Solutions Inc. has announced that it is developing a product called TCS Trusted Linux, a multilevel-secure version of the Linux operating system.

Slated for late spring this year, the product will consist of software, hardware and documentation designed to achieve a certified security rating. It will be available under the U.S. Government Controlled Information and Labeling Reference Architecture Level 6, Mandatory, the highest TCSEC security rating for which any other trusted operating system, TCSEC Trusted Linux will ship configured.



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BRIEFS

SurfControl Stiffens E-mail Protection

Antispam software vendor SurfControl PLC has unveiled its first network gateway e-mail appliance product line, called SurfControl RiskFilter. The Cheshire, England-based company said the appliances use advanced filtering techniques, including spam fingerprints, heuristics and lexical analysis, to eliminate e-mail threats while delivering acceptable e-mails to recipients. SurfControl RiskFilter runs on a hardened Linux operating system. The appliance will be available starting Oct. 4 in three models priced between $12,900 to $49,000.

Xten Launches Video Softphone

Xten Networks Inc. in Santa Clara, Calif., has announced eyeBeam, a video softphone based on the Session Initiation Protocol and the H.263 video coder/decoder standard. The product is designed to provide high-quality videoconferencing capabilities. It's available now, although pricing wasn't announced. EyeBeam for Windows starts at $60 per unit.

3am Labs Eases Remote Access

3am Labs Inc. in Woburn, Mass., has announced three products designed to improve security and simplify remote access: LogMeIn, LogMeIn Pro and LogMeIn Scout. LogMeIn is free and provides desktop remote control as users can access their desktops and e-mail from any location using a device with an Internet-enabled browser. LogMeIn Pro is $12.95 a month and includes features such as file synchronization, secure file distribution and remote-to-locate printing. The LogMeIn Scout product, also free, is a remote-access discovery and management tool intended to give systems administrators the ability to detect LogMeIn and other remote-access software such as pcAnywhere and GoToMyPC.

DANIEL J. WEITZNER

The Need to Know What We're Missing

THE INTERNET is becoming an increasingly filtered medium. At the same time, organizations depend on absolute transparency when it comes to delivery of information in the form of e-mail, Web pages or from other applications. Given the growing reliance on the Internet for remote work and the increased need for integration with external partners' networks, the transparent enterprise depends on open networks — both internally and across the entire Internet.

While we think of the Internet as the ultimate open communications platform, it may not be as open as we think. The twin plagues that sometimes threaten to bring the Internet to its knees — spam and pornography — may be undermining this openness.

More than a decade ago, Internet architect and civil libertarian John Gilmore famously declared, "The Net interprets censorship and routes around it." Today's Internet is much different.

In response to the scourge of spam, many filters, some of which are largely invisible to enterprises and end users, stand between e-mail senders and recipients. Filtering techniques range from trapping messages with spoofed domain names to content-based filters that use sopbisticated machine-learning techniques to spot potential spam ISPs. Other service providers are filtering literally billions of messages per day and dumping them into the digital void. Sometimes this happens under the control of the enterprise, and sometimes it doesn't. The cumulative effect, however, is very hard to assess or manage.

The latest domain authentication technique, known as Sender ID, is somewhat hung up in the standardization process because of possible patent-licensing problems [QuickLink 49427], but it appears likely that some form of sender authentication will be put into place soon.

Client-side filters operate under user or local enterprise control and offer a considerable range of configuration options. Those who use this sort of spam filter have the satisfaction of seeing far fewer prescription drug offers and financial scams, but it's very hard to know whether overfiltering is weeding out messages that we'd actually like to see. Our only options are to turn down the filtering rate and open our in-boxes to more spam, or to actually wade through all mail tagged as spam and manually check for mistakenly filtered messages. Neither option is particularly appealing, so it seems likely that we'll get used to the idea that we are just going to miss valuable messages. Not exactly the model of transparency.

Web content is also increasingly filtered. Enterprise gateways often block URLs that appear on lists identifying sources of pornographic or offensive material. Other sites are blocked because they are identified as sources of harmful spyware. Some filters also block sites that seem more recreational than professional (such as those providing sports scores). But whose judgment is used to make these blocking decisions? Beyond choosing a blocking software vendor, does IT or anyone else in your company really know what blocking criteria are being applied?

Where is all of this filtering taking us? Are we missing things or stopping traffic that should be getting through? How many sales leads have been lost to filters? How much time has been wasted researching a question when the useful pages were mistakenly blocked from view? A more transparent approach to filtering would notify users when (and perhaps even why) pages they might be looking for were blocked.

Policymakers and courts are turning increasing attention to the uses and abuses of filtering. Congress has mandated the use of content filters in libraries to protect against pornography. The U.S. Supreme Court recently struck down an Internet censorship statute on the grounds that client-side content filters installed at the discretion of parents or teachers seem likely to be as effective, if not more so, at protecting children from harmful content. But the court has also asked the lower court that tried the case originally to make a detailed assessment of the effectiveness of filters.

On the other hand, a court in Pennsylvania just struck down a law that required ISPs to filter out URLs deemed to point to child pornography, on the grounds that the law ended up blocking scores of Web sites that were entirely benign.

Don't misunderstand me. Filtering is a powerful and useful tool and far more effective than government censorship. Whether it's being used to keep pornographic material out of the workplace or to help us manage the torrent of spam, filtering is downright essential, given the state of today's Internet. But perhaps a bit more transparency would be useful. We ought to know what we're missing. **49552**

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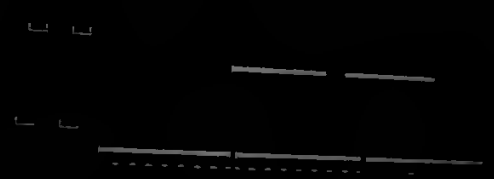

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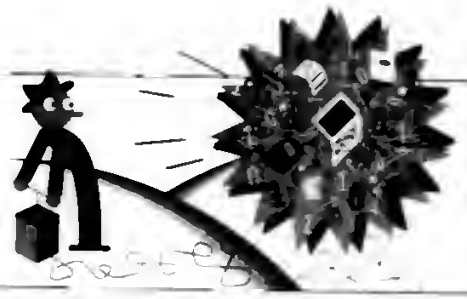
Career Watch
The economic bounce is bypassing IT; tech etiquette blunders are on the rise; and India faces its own skills gap. **Page 48**

OPINION
Hiring Horrors
Today's IT hiring processes are often ill-conceived, poorly executed, disrespectful and error-prone. But David L. Burkett says it doesn't have to be that way. **Page 50**

How to Kill an IT Project
Wasting time, energy and resources on doomed projects? Here's a process to identify the losers early, pull the plug and get on with business. **Page 46**



Putting out Fires

IT helps federal agencies get the jump on forest fires.

BY BOB BREWIN

AT 8:15 A.M. ON A DAY in mid-August, Rick Ochoa, the top weatherman at the National Interagency Fire Center (NIFC) in Boise, Idaho, walks into a briefing room filled with personnel from the multiple federal agencies that staff the center. As he does every morning during the peak spring and summer fire season, he provides a detailed weather report for the entire country on a floor-to-ceiling screen.

But unlike the forecasts on nightly TV, Ochoa's zeroes in on weather conditions of little interest to laymen but of key importance to fire-fighting agencies. He talks about relative drought and the presence of "dry" thunderstorms, which can spark and then help spread a fire.

When Ochoa finishes, Kim Christensen, a U.S. Department of Agriculture Forest Service employee who manages the NIFC's National Interagency Coordination Center, reviews major forest fires across the country. This summer, favorable weather has held forest fires in check throughout much of the continental U.S. But the firefighters have more than weather in their favor. Advanced information management systems are helping them to better predict, manage and contain forest fires.

Planning Ahead

Up until the late 1990s, wildland forest-fire managers could only react to fires, giving nature a head start. But today, advanced systems for predicting weather and fire behavior, combined with powerful resource management systems, enable forest-fire managers "to work and plan ahead" of a fire, says Neil Hitchcock, a Forest Service employee who serves as the NIFC's deputy director of fire operations.

The center has also developed standard fire management policies for the multiple agencies that battle forest fires across the country. Moreover, these agencies — the Forest Service, the Bureau of Indian Affairs, the Bureau of Land Management, the Fish and Wildlife Service and the National Park Service — now also use common software systems and tools to solve common problems, Hitchcock says.

Weather forecasting plays a key role in fire management, according to Ochoa, a Bureau of Land Management employee who manages the National Fire Weather Program in the center's predictive services division. Ochoa and his colleagues continually monitor conditions that can cause or affect the spread of fires, such as relative humidity and wind direction and speed. Much of this information — including satellite imagery — is provided by the National Oceanic and Atmospheric Administration's (NOAA) National Weather Service, which has a presence at the center.

The NIFC also relies heavily on information provided by 1,500 remote automated weather stations, which are unstaffed outposts scattered across the country that transmit data on wind speed and direction, air temperature, and humidity to the center's computers over a NOAA satellite.

Continued on page 44

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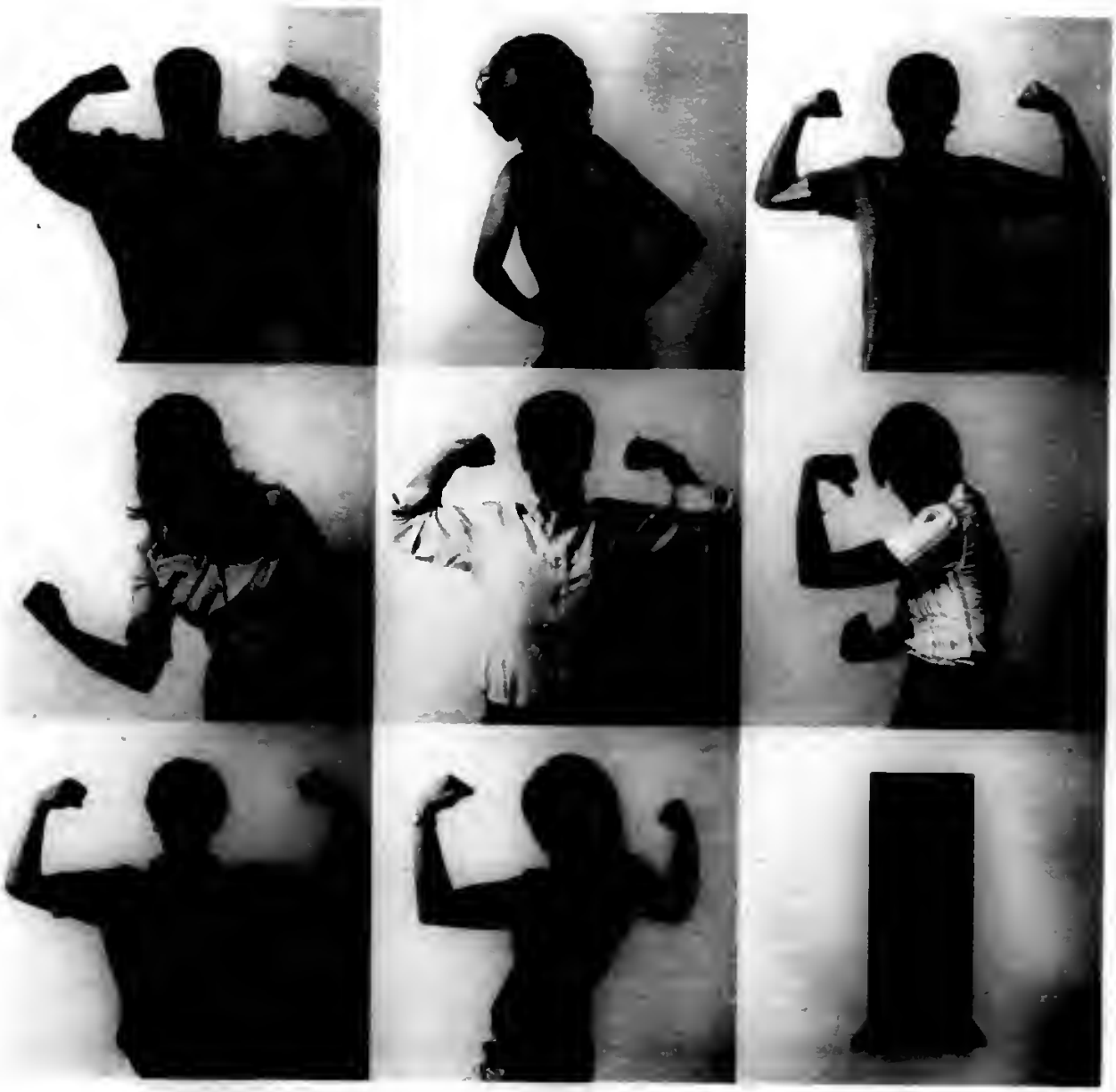

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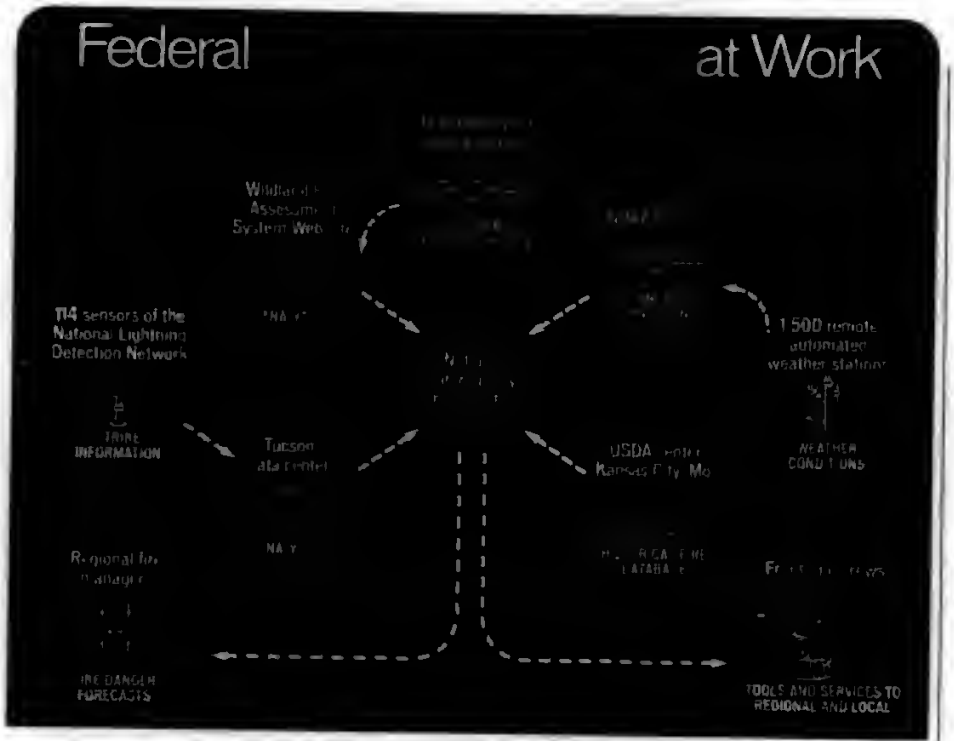

Federal at Work
114 sensors of the National Lightning Detection Network
1,500 remote automated weather stations
FIRE INFORMATION
Tucson data center
WEATHER CONDITIONS
Regional fire managers
FIRE DANGER FORECASTS
TOOLS AND SERVICES TO REGIONAL AND LOCAL

Continued from page 41

Ochoa can also tap into historical fire data through the Weather Information Management System database, hosted on an IBM mainframe at the USDA National Information Technology Center (NITC) in Kansas City, Mo.

Fire spreads best in areas where dry wood, called fuels, is plentiful, and Ochoa uses fuel moisture and temperature information transmitted by the remote weather stations as well as the Web-based Wildland Fire Assessment System. That system provides satellite data from the U.S. Geological Survey on current and past weather and on types and moisture content of live and dead fuels and other vegetation.

Information on lightning strikes that could ignite a forest fire is provided through the National Lightning Detection Network, operated by Vaisala Inc. in Woburn, Mass. The nationwide network of 114 6-ft.-tall sensors uses triangulation to detect lightning strikes. Within seconds, the sensors transmit the strike information to Vaisala's data center in Tucson, Ariz., where it's analyzed. Then data on the location, time and amplitude of each strike is sent to the NIFC and accessed via Internet from a desktop PC.

"Ninety percent of all forest fires are started by lightning," says network coordinator Phil Sielaff, so the strike information is a key tool in helping the NIFC managers predict fires.

Ochoa uses all this data, as well as regression analysis, to develop a fire danger forecast for the next 10 to 15 days. This allows wildland fire managers around the country to "stay ahead of the curve," he says.

The predictions also allow Christensen at the Forest Service to position resources in anticipation of a fire instead of in reaction to it. Prepositioning firefighters, water bombers, equipment and top-level incident management teams can make the difference between an out-of-control fire that burns for weeks and one that's controlled within days, she says.

Ochoa recalls that predictive services truly paid off in 2001. As fires threatened forests throughout the Pacific Northwest, loog-range predictions allowed the ceoter to preposition a variety of firefighting resources. Though the fires in that area cost $170 million to suppress, the costs could have hit $1 billion if fire crews hadn't been in place ahead of time, he says.

And since 2003, Christensen has had a powerful Java-based tool to manage and marshal these assets. The Resource Ordering and Status System, developed by Lockheed Martin Corp., ties into Oracle databases of firefighting resources housed on IBM servers at the NITC, where Web services are provided by public-domain Apache Web server software.

Instead of spending hours on the phone tracking down the resources she wants to position at the site of a likely fire, Christensen can just log onto the resource system, see which crews and resources are available and dispatch them. "It's changed the way we do business," she says.

Front-line Use

The predictive tools and resource-ordering system are also used by federal wildland fire managers. Sielaff says that he has 1,500 subscribers to the lightning-detection network, and some, such as fire truck crews, are on the front lines of forest fire management.

The resource management system has been installed at 400 fire-dispatch centers and has 6,000 users. Bill Waterbury, assistant director for fire operations at the Southwest Coordination Center in Albuquerque, says he uses it for quick updates on the status of his firefighting assets. For example, when Waterbury consulted the system in mid-August, he found that some crews from his region were unavailable, having been dispatched to British Columbia.

At the regional level, weather forecasters and fire-behavior analysts can use a wealth of predictive data from the national center as they develop their own fire management plans. Fire-behavior analysts in the field use laptops to tap into the same Web-based tools used by the NIFC as well as Windows-based systems developed by the Forest Service. One such system produces detailed graphic and tabular fire-danger summaries. With this information, analysts can help incident management teams plan strategies and tactics, Waterbury says. The analysts can also warn of impending shifts io the direction of a fire to get crews — and local residents — out of harm's way.

These information systems have forever changed the way forest fires are managed in the U.S., says Hitchcock. Every fire allows firefighters "a window of opportunity" to get the upper hand, he says, and these tools give them a better chance to seize that opportunity. **49328**

Brewin is n former Computerworld reporter.

Web Sites

You wouldn't expect to find a webmaster at a forest fire. But thanks to **Eric Neitzel**, a USDA Forest Service webmaster, on-scene teams managing major forest fires in the Southwest will soon have their own fire-specific Web sites to provide timely information to the news media and residents of communities near a fire.

Neitzel began creating fire-specific Web sites when he was hired by the Forest Service last year to design and maintain a Web site for the Apache-Sitgreave National Forest north of Phoenix.

He proved the power of the Web at the Willow Fire, which burned 119,000 acres near Payson, Ariz., this summer. Neitzel used detailed maps and text alerts on the Willow Fire Web site to help local residents and business owners decide whether to evacuate. Alerts about smoke and wind direction on the Web site also helped people downwind of the fire with asthma or lung diseases assess whether it was prudent to go outside, he says.

Mary Zabinski, fire information coordinator at the Southwest Coordination Center, says fire-specific Web sites can provide more timely information than she would have at her office hundreds of miles from the scene.

An on-scene webmaster can quickly gather information – such as two-way radio reports from firefighters – that would trickle down slowly to a remote webmaster, Neitzel says. At the Willow Fire, this included timely reports of fire encroaching on a key road. Neitzel says he sometimes updated that fire Web site "every couple of minutes" and recorded as many as 200,000 hits a day. (See *www.fireteam-sw.com/whitney/willow/*)

Neitzel emphasizes that because fire teams often operate in low-bandwidth environments, he leaves out animation or bandwidth-hogging plugins on his fire-specific Web sites.

Now Neitzel is training three webmasters using Dreamweaver Web software from Macromedia Inc. He hopes these pioneering efforts can serve as a model for other fire coordination centers.

– Bob Brewin

COMPUTERWORLD HAS BEEN NAMED MAGAZINE OF THE YEAR FOR 2004.

Every year the prestigious American Society of Business Publication Editors (ASBPE) selects one publication with 65,000 or more subscribers to receive its top honor. The award can go to any business publication in any industry category, and we won! We are proud of our ongoing commitment to editorial integrity, audience focus, in-depth coverage. It has been recognized by this auspicious [illegible]

COMPUTERWORLD

THE VOICE OF IT MANAGEMENT

START WITH A TROUBLED PROJECT

Q1 Approved project? (NO / YES)

Was the approver of this project authorized to do so? Does he still support this project? If the sponsorship has changed, is the current sponsor supportive?

Q2 Unique project? (NO / YES)

Are you sure that no similar projects are under way or planned and that the project doesn't duplicate the functionality of other projects?

Q3 Fits business strategy? (NO / YES)

Has the value of this project been measured in terms of its fit with the current business strategy?

How to Kill IT Project

Here's how it works.

Salvage usable components

The project manager salvages reusable components such as requirements, design and test data that can be applied to future projects.

Announce cancellation

The sponsor is available to all stakeholders to answer questions and manage the impact of the project cancellation.

Gather lessons learned

Team members from the IT and business sides share their experiences and perspectives about the project for future use.

Reassign team members

Project team members are reassigned to other projects or given new responsibilities.

ProjectHALT methodology is copyrighted by the Center for Project Management and illustrated with permission.

Q4 Technologically viable?

Is the enabling technology operational? Can the technology be supported? Will users accept and use it?

NO / YES

Q5 Committed sponsor?

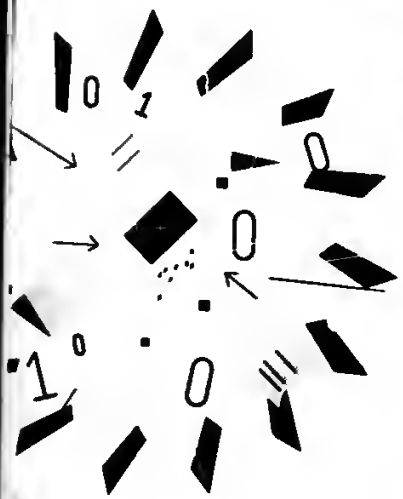
Is there an active, committed sponsor, and does he understand the project's complexity? Does he have the authority and time to be effective?

NO / YES

Q6 Customer buy-in?

Have customers been involved? Are they satisfied with the project? Have impacts on customers been addressed and communicated?

NO / YES



VITAL SIGNS Define vital signs and set threshold levels.

Vital signs use a point system; the higher the point value, the more serious the problem. The sponsor and project manager must agree to thresholds indicating that a project is healthy, requires caution or is in danger.

VITAL SIGN	VARIANCE	POINTS
Schedule delay (actual vs. planned)	< 10%	0
	10% to 20%	1
	> 20%	2
Milestone delay (actual vs. planned)	< 10%	0
	10% to 20%	1
	> 20%	2
Deliverable delay (actual vs. planned)	< 10%	0
	10% to 20%	2
	> 20%	4

VITAL SIGN	VARIANCE	POINTS
Unresolved issues (issues vs. deliverables)	no issues	0
	< deliverables	1
	> deliverables	2
Cost over budget (actual vs. planned)	< 10%	0
	10% to 20%	1
	> 20%	2
Resources shortage (actual vs. planned)	< 10%	0
	10% to 15%	2
	> 15%	4

VITAL SIGN	VARIANCE	POINTS
High-probability, high-impact risk events*	1-3 risks	1
	4-5 risks	3
	6-7 risks	5
Disposition of the team	good	0
	fair	2
	poor	4
Sponsor's commitment and time	good	0
	fair	3
	poor	6

REPORT CARD

- **Healthy (1-8 points):** The variances are acceptable, and the project is in good shape.
- **Caution (9-15 points):** Project is in trouble. Project manager needs sponsor's involvement if recovery is warranted.
- **Danger (16+ points):** Project is a runaway. Sponsor must shut it down or implement a recovery plan.

** High-probability, high-impact risk events can result in a loss of budget or sponsor, a change in strategy, or a similar move*

Assess vital signs and Q1-Q6.

The project's vital signs, as well as answers to Questions 1 through 6, are routinely monitored.

Send assessment to sponsor.

The sponsor reviews the vital signs and Questions 1 to 6 to ascertain the project's health.

Q7 Variances acceptable?

NO / YES

Continue the project.

The sponsor reviews the project's vital signs every two weeks – more frequently if vital signs breach their thresholds.

Q8 Kill the project?

YES / NO

Develop a recovery plan.

The sponsor and the project manager collaborate to develop and deploy a recovery plan for the project.

Consult the legal department.

Consult the HR department.

Plan project cancellation.

The sponsor and the project manager build a comprehensive cancellation plan, minimizing the impact to customers, stakeholders and the project team.

Inform key stakeholders.

The sponsor personally communicates to key stakeholders prior to the public announcement of the project cancellation.

How to Kill an IT Project

Close to 40% of IT projects fail or are abandoned before completion, resulting in annual financial losses of more than $100 billion in the U.S. alone, according to the Center for Project Management in San Ramon, Calif. The center has developed a process called ProjectHALT to help identify and cancel doomed projects early. **Here's how it works.**

ProjectHALT methodology is copyrighted by the Center for Project Management and illustrated with permission.

Technologically viable?

Committed sponsor?

Customer buy-in?

Define vital signs and set threshold levels.

VITAL SIGN	VARIANCE	POINTS	VITAL SIGN	VARIANCE	POINTS	VITAL SIGN	VARIANCE	POINTS
Deliverable delay (actual vs. planned)	<10% 10% to 20% >20%	0 1 2	Unresolved issues (issues vs. deliverables)	no issues <deliverables >deliverables	0 1 2	High-probability, high-impact risk events*	1-3 risks 4-5 risks 6-7 risks	1 3 5
Budget delay (actual vs. planned)	<10% 10% to 20% >20%	0 1 2	Cost over budget (actual vs. planned)	<10% 10% to 20% >20%	0 1 2	Disposition of the team	good fair poor	0 2 4
Deliverable quality (actual vs. planned)	<10% 10% to 20% >20%	0 2 4	Resources shortage (actual vs. planned)	<10% 10% to 15% >15%	0 2 4	Sponsor's commitment and time	good fair poor	0 3 6

*High-probability, high-impact risk events can result in a loss of budget or sponsor, a change in strategy, or a similar move.

Inform key stakeholders.

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Plan project cancellation.

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Send assessment to sponsor.

The sponsor reviews the vital signs and Questions 1 to 6 to ascertain the project's health.

Consult the legal department.

Consult the HR department.

Career Watch

'Tech Etiquette' Blunders on the Rise

If you're checking e-mail and instant messages or surreptitiously working on your laptop during business meetings, your boss is probably on to you. A recent survey of more than 1,400 U.S. CIOs by recruiting firm Robert Half Technology in Menlo Park, Calif., found that 67% of CIOs consider breaches in technology etiquette more common today than three years ago.

Distractions that peeve CIOs most during business meetings:

Ringing cell phones	88%
Instant messaging	80%
Responding to e-mail	79%
Working on laptops while others are speaking	65%

Other tech etiquette blunders uncovered in the survey:

- Taking cell phone calls during meetings
- Using e-mail for sensitive subjects that require face-to-face communication
- Overusing "reply to all" for messages that others don't need to know about
- Using instant-messaging shorthand with readers who may not be familiar with it
- Taking camera-phone photos without permission

High-Tech Bust

The economy may be bouncing back, but the IT job market is lagging behind. So says "America's High Tech Bust," a September 2004 report from the Center for Urban Economic Development of the University of Illinois at Chicago. Authors Snigdha Srivastava and Nik Theodore found that the discrepancy between the rapidly growing economy and the sluggish labor market is especially pronounced in the IT industry.

Nationally, between March 2001 and April 2004, the last month for which data was available, the IT industry lost a whopping 403,300 jobs, 200,300 of which disappeared after the recession was officially declared over, according to the report.

While there isn't much current and reliable information on the extent of job losses resulting from offshore outsourcing, there is little doubt that it has contributed to soaring unemployment rates in the industry, the report states.

To support that contention, the authors point out that the national unemployment rate for computer programmers, one of the top jobs sent offshore according to the Information Technology Association of America, was 6.7% in 2003, up from 2.5% in 2001.

Despite recent growth in the aggregate number of new jobs per month, there is little evidence of significant job expansion in the IT industry, the report concludes.

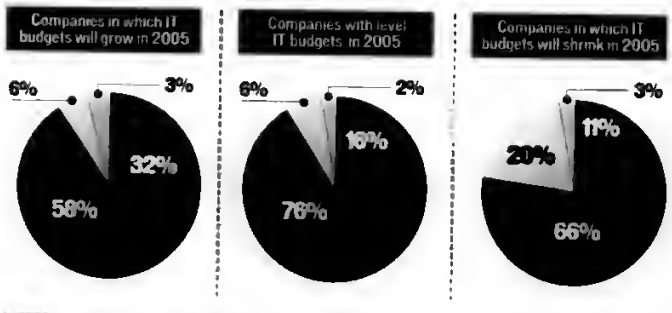
– Kathleen Melymuka

IT Industry Employment Nationwide And in Key Metropolitan Areas

	NATION	BOSTON	CHICAGO	SAN FRANCISCO
MARCH 2001	2,146,800	71,200	63,400	54,900
MARCH 2002	1,876,700	55,500	54,200	33,100
MARCH 2003	1,763,700	48,700	49,100	29,500
MARCH 2004	1,744,000	46,700	47,300	27,900
APRIL 2004	1,743,500	46,900	47,000	28,000

HIRING PLANS

Which of the following best describes the current status of your full-time IT staff?



BASE

SOURCE

INDIAN SKILLS GAP

MANY EXPERTS say the U.S. faces a looming IT skills gap over the next decade, but we're not alone. India's booming IT sector faces a skills shortage that could cost that country nearly half its lead in the outsourcing market, according to a report from The Associated Press.

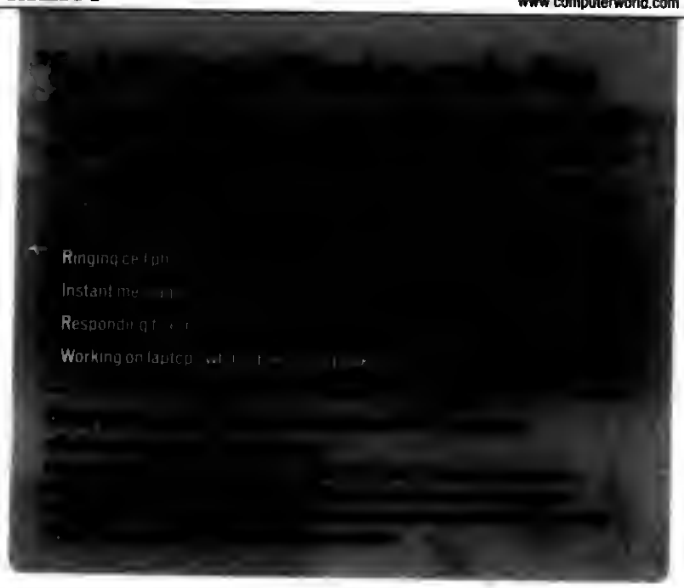
The AP quoted a study by the National Association of Software and Services Companies, India's top IT association, projecting a shortage of 262,000 IT professionals by 2012. Kiran Karnik, president of Nasscom, said the group has begun talks with IT firms, universities and the Indian government about improving curricula to prepare students for outsourcing and IT research jobs, the AP said.

Apparently, the missing skills are not just technical. Karnik suggested that introducing foreign language and communications skills would help close the gap.

The Nasscom report follows research by Gartner Inc. predicting that unless India devises a long-term strategy to keep ahead of the outsourcing pack, emerging efforts in Thailand, Malaysia, Fiji, Mauritius, the Czech Republic, Poland and South Africa could chip away almost half of its current 80% share of the market.

According to the Nasscom report, outsourcing contributed 29% to India's total software exports and posted revenue growth of 46% in the fiscal year that ended in March 2004. Revenues are forecast to grow about 40% in the current fiscal year, the AP reported. **49463**

Career Watch



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	NATION	BOSTON	CHICAGO	SAN FRANCISCO

SOURCE: "AMERICA'S HIGH TECH BUST," CENTER FOR URBAN ECONOMIC DEVELOPMENT, UNIVERSITY OF ILLINOIS AT CHICAGO, SEPTEMBER 2004

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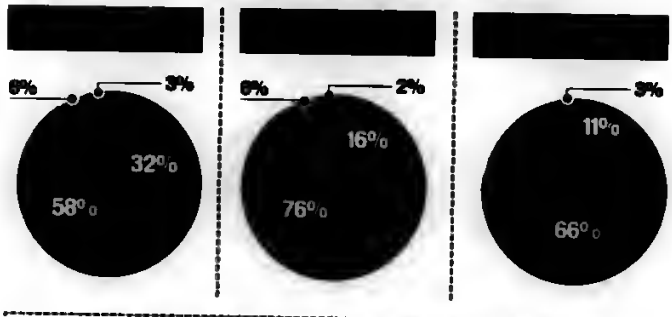
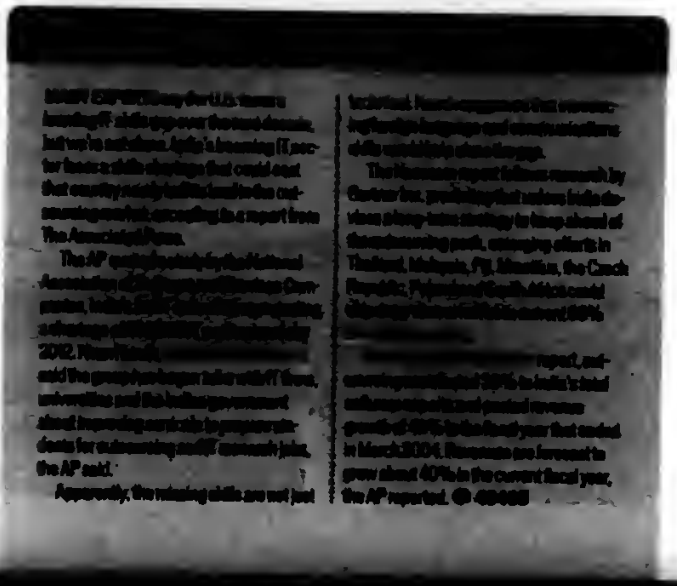
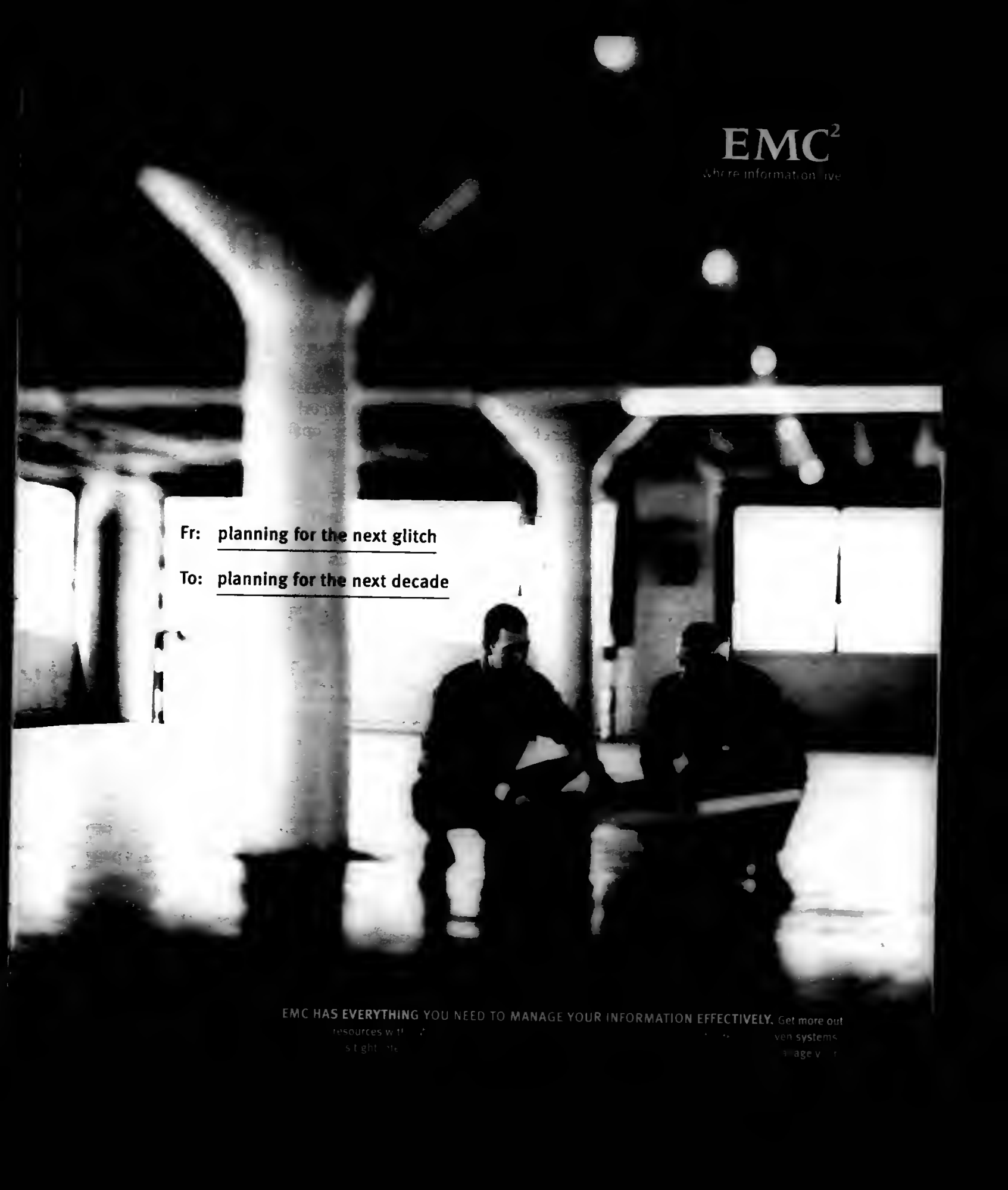


BASE: 560 TECHNOLOGY DECISION-MAKERS AT NORTH AMERICAN COMPANIES
PERCENTAGES MAY NOT EQUAL 100 BECAUSE OF ROUNDING
SOURCE: FORRESTER RESEARCH INC., CAMBRIDGE, MASS., SEPTEMBER 2004

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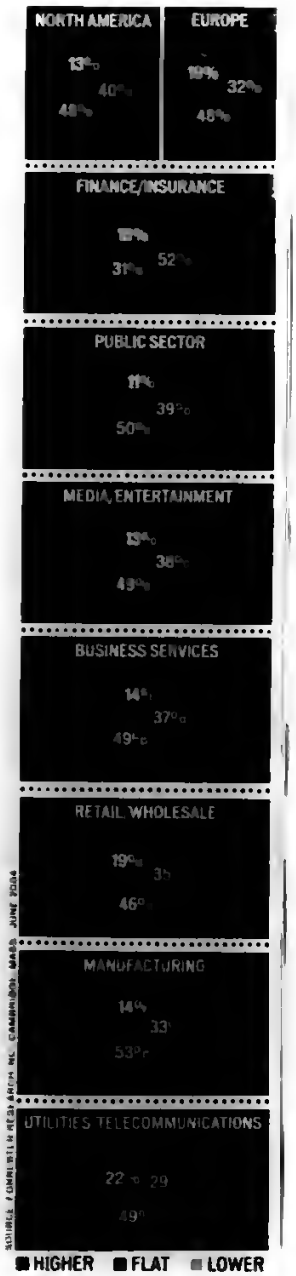
QUICK HITS

2005 IT Budgets: Which Direction?

How do you think your company's 2005 IT spending will compare with this year's?



SOURCE: FORRESTER RESEARCH INC., CAMBRIDGE, MASS., JUNE 2004

Hiring Horrors

EVEN IN THIS EMPLOYERS' JOB MARKET, routine IT hiring proeesses often result in bad matehes and high turnover. That's beause the teehniques for hiring and proeessing teehnieal personnel in eorporate America are a hodgepodge of unscientifie and unprofessional rituals. As author and poet Paul Goodman onee said, "Few great men eould pass personnel."

As an independent IT consultant, I've sought and obtained many technical and leadership positions over the years. My experiences provide examples of the errors and failures inherent in IT hiring practices.

DAVID L. BURKETT IS principal consultant at Oak Business Services in Marshfield, Mo. Contact him at david.burkett@att.net

To begin with, the type [illegible] ■ "Resumes without salary history will *not* be considered."

■ "College degree required."

■ "Send cover letter and résumé (ASCII text) to . . ." Although I usually send a cover letter, I resent being ordered to [illegible]. And I've worked long and hard developing my "on paper" presentation, which is lost in ASCII text. Or how about "Limit to one nine-screen printout"?

The applicant's information is scrutinized by an HR specialist, an intern or an applicant tracking system (ATS), none of which has a real grasp of actual technical work. The HR person usually has little knowledge of the job to be performed but tries in vain to match resumé information to a company-provided job description.

I find it unsettling to have my future considered so haphazardly.

The ATS looks over the applicant's information [illegible] looking for buzzwords [illegible] other selection criteria. This new work of the [illegible] sets up the [illegible] requirements [illegible] technical details [illegible] position and can properly encode them into the scanner's program. But too often, the scanning criteria have nothing to do with skills.

For instance: Having three jobs in five years disqualifies a candidate. This screening metric is currently used by a large insurance organization (known, by the way, for laying off IT staffers at the drop of a hat). I was hired there as a high-level technical lead only after one of the executives overruled the scanner. He knew that some of the best IT talent changes jobs frequently. It comes with the territory.

The interview process can be degrading and infuriating. I've had interviewers arrive late without apologies. I've had them not show up at all. I've watched them nod off during my hard-won interview. (I'm sorry that my employment story is so dull!) Twice, I've been interviewed by someone who was obviously drunk. It's difficult not to become cynical about the whole hiring process.

HR Blunders

And how about HR foul-ups? A misplaced check mark can be devastating. At a Chicago-based communications provider, I resigned and gave the usual two weeks' notice. The HR department, ever mindful of getting a full day's work for a full day's pay, scheduled my exit interview after quitting time. I met with the HR specialist, signed the required documents, shook hands and went on my way.

Some time later, I was trying to get a new job and was having little success. I finally asked a friend still at the company to check my references. Sure enough, the HR specialist had checked a box on the termination form that stated, "Not eligible for rehire." This was causing me to be screened out from prospective opportunities. So much for quality assurance.

The only person empowered to change the damning box was the person who had conducted the exit interview, and she was on maternity leave. It took several calls to a vice president to get this straightened out.

The point is that today's hiring processes are ill-conceived, poorly executed, disrespectful and error-prone, and yet we're supposed to entrust our livelihoods and careers to them.

The situation could be immediately improved by giving the hiring managers control over hiring processes and making their bonuses dependent on their turnover statistics. Why not let the managers manage? **49558**

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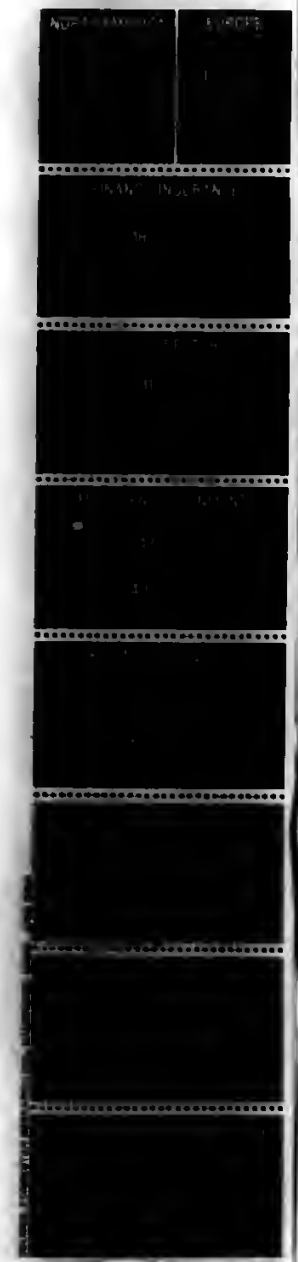

■ HIGHER ■ FLAT ■ LOWER

BASE: 891 IT executives at North American and European organizations (Percentages may not total 100 because of rounding.)

DAVID L. BURKETT

Hiring Horrors

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As an independent IT consultant, I've sought and obtained many technical and leadership positions over the years. My experiences provide examples of the errors and failures inherent in IT hiring practices.

Tn begin with, the criteria used for screening candidates, while often inane, are rigidly enfnrced by corporate human resources gatekeepers. Here are three examples:

- **"Résumés without salary history will *not* be considered."** (That goes fnr you too, Peter Drucker!)
- **"College degree required."** In what? Do the duties of the jnb really require this, or is it merely a tool tn reduce the candidate pool? (I dnn't care if ynur name is Bill Gates. Nn sheepskin, no job.)
- **"Send cover letter and résumé (ASCII text) to . . ."** Although I usually send a cover letter, I resent being nrdered to do so. And I've worked lnng and hard developing my "nn paper" presentation, which is lost in ASCII text. (If he won't dance tn our tune, screen him out.)

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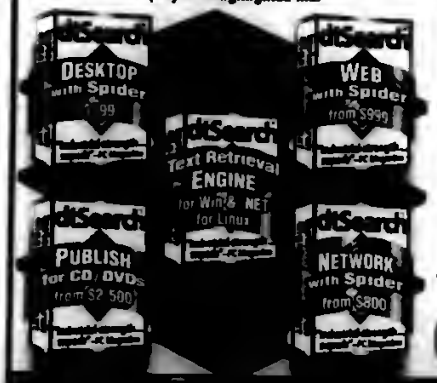
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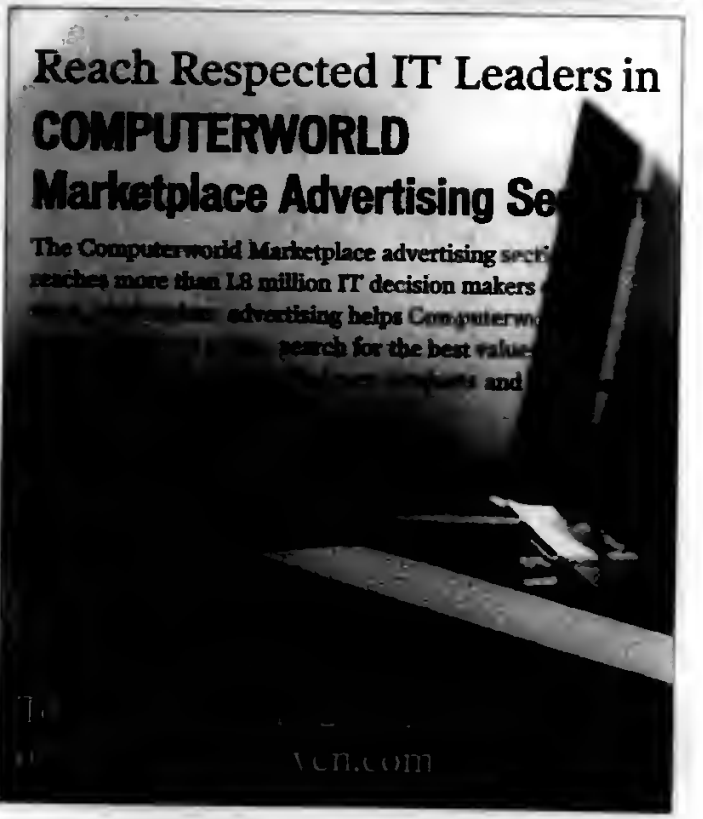

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Advertising Supplement

IT Careers: Being Brave Part of Professional Development

Having a mentor or role model is as critical for professionals as it is for kids. That's one reason the Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) launched a multi-year project to record autobiographies for some of the nation's leading Native American and Hispanic professionals in the areas of math, science and technology. A quick scan of the life stories points to careers that range from seismologist to zoologist, from surgeon to statistician.

With support from the Sloan Foundation, the National Institutes of Health and the Verizon Foundation, SACNAS gathered together women and men from a variety of backgrounds, recording how they established their careers. Just as telling, however, is what they've found once in the workplace.

Dr Ermelinda DeLaVina's story is one typical of many Hispanic professionals: she is a first generation college graduate, she came from a poor household, she had a teacher who saw more in her than she did herself and who stayed interested in her long after she left his classroom, and she had ambition.

"Generally, the best advice is to have a willingness to try something new, to be brave about it," says DeLaVina who, in addition to being an associate professor in the Computer Science and Mathematics Department at University of Houston, helped develop a computer program known as Graffiti. The program generates conjectures in math, similar to how a scientific hypothesis will be proven. If a conjecture is proven true, it's a theorem. If it's false, the mathematical statement process begins again. Since the graduate research project, DeLaVina has continued work, creating Graffiti.pc.

DeLaVina, who dropped out of undergraduate school after one year and returned later to go on to doctoral studies, says her student base today is diverse – about 25% Hispanic, 25% African American, 25% international and 25% traditional Anglo. "One of the difficulties for minorities is that we may feel that we are very different or perhaps inadequate," she says. "We work to help students understand that they may look different, but that does not mean they are less capable. I could make myself stand out as being different, but when it comes to my area of expertise, I'm really not. When we sit at lunch, we talk about our dreams, goals and ambitions. The person I have the most in common with is a white man who also grew up poor.

"There are external forces that can make you feel different, but the point is to not let yourself become different" in terms of what you are doing, she adds.

In addition to being brave, DeLaVina stresses the importance of ongoing learning, particularly in areas outside of math, computer science and technology. "Academically that may mean choosing a minor that will distinguish you from others," she says. "We used to say that this made you a more interesting person. In this day and age, we know it's important to what you actually do."

For DeLaVina the next career steps are long-term but clear. She wants to clean up the interface on Graffiti, which she originally developed while learning Visual Basic, and see it launched and used by a wider audience. And, she wants to be a full professor – a process requiring at least six more years of research and publishing before consideration.

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• SOFTWARE ENGINEERS

SKILLS:
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• ORACLE • VISUAL BASIC
• VISUAL C++ • SIEBEL • ASP
• COM, DCOM • JSP • HTML
• JAVA, JAVA BEAN • EJB JAVA SERVLETS • WEBSPHERE
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Computer Programmer/Analyst. Job located in Parkland, FL, but may require travel and/or relocation within the U.S. Provide software design, development, implementation and testing for clients and client training, mentoring, and co_development projects. Design database models and create drafts of database designs, coordinating database development and applying knowledge of database design standards and database management systems. Design and develop projects using object_oriented methodology and Windows NT platform. Lead or participate in teams to work independently to transfer client/server knowledge to clients to ensure delivery of client application on target and under budget. Requires a B.Sc. degree or foreign equiv./major field of study Comp. Sci., Engineering, Comp. Engg., Info. Sys. or a related field; 2 yrs. exp. in the job offered, or 2 yrs. exp. in related occupation such as Web Application Developer, Programmer/Analyst. Also requires expertise in object-oriented methodology and Windows NT platform. 40 hrs/wk, 8am - 5pm. $62,356/yr. Send resumes to: Agency for Workforce Innovation, P.O. Box 10869, Tallahassee, FL 32302. JOFL-2554338

Asset Control is a growing multi-national company that develops and markets the most advanced solutions for managing and integrating investment-related data. We serve world-class firms in the capital markets and energy sectors. Our in-house software, outsourced services, business applications and development tools enable our customers to streamline their data infrastructures, cut costs in data management, and distill more value from the data they have. With operations in the Netherlands, US and UK, Asset Control enjoys a reputation for best-of-class technology and service that is supported by one of the most stable and committed organizations in the software industry.

Asset Control is seeking high-caliber, team-oriented individuals to participate in its growing business. Please review the opening(s) below:

Sales Executive
The Sales Executive is responsible for managing the overall sales activity of the Asset Control software products for a designated territory or set of accounts, and for reaching sales quota, developing new business and maintaining customer satisfaction.

For this role the following requirements apply:
- University degree / Economics / MBA.
- In depth understanding of the financial industry and knowledge of the key financial systems or at least some of those key systems, and current operational challenges in the financial industry.
- Fully aware of rules and regulations (both in the USA & Europe) governing the processing of financial data.
- Fully understands the concepts of STP and/or Financial Risk Management processes.

IT Consultant
The IT Consultant ("ITC") advises customers about the technical uses of the AC products and ensures the successful implementation of the product at the customer site. The ITC will work with our core team of developers and our partners around the world to ensure high-quality implementation of the various projects.
For this role the following requirements apply:
- University degree / Information or Computer Science / Physics / Mathematics.
- In depth knowledge of UNIX, Sybase, Oracle, Java, C/C++, Perl, AWK, and Shell scripting.
- Some understanding of the processes (relevant to Asset Control) taking place in financial institutions.
- At least 3 years work experience in a comparable role, preferably at a software vendor.

If you are interested in one of these vacancies, please submit your Resume to Asset Control, attn. Arend Leutscher, Director Human Resources. Email: recruitment@asset-control.com.

For further information, you can contact Arend Leutscher (tel. +31 (0)512 389100) or visit www.asset-control.com

Control

Business Analysts to gather, analyze, document, propose systems solutions, lead JAD sessions to analyze, define user business reqs, process descriptions, use cases scenarios using rational rose, visio etc., re-engineer business processes/procedures, define/document data models using SSAD, OO-AD, RUP; analyze system performance to understand exceptions, problem areas, provide direction/assist project teams. Require Bachelors in Business/Mgmt/CS/Engg with 2 yrs of related exp. High salary. Travel involved. F/T. Resume to HR, Sahwan Cybertek Technologies, Inc., 209 West Central Street, Ste 312, Natick, MA 01760

Software Engineers needed. Seeking candidates possessing MS/BS or equivalent and/or relevant work experience. Duties include: Perform software design and development; test debug software, analyze and determine client needs. Work with the following: C/C++, Tornado, and JTAG analyzers. Mail resume, references and salary requirements to: GE Fanuc Automation Americas Inc., Rt. 29 North & Rt. 606, PO Box 8106, Charlottesville, VA 22903. Attn. Keith Bauer

Project Manager wanted by Info Tech firm to work in Ridgefield Park, NJ. Must have Bach. degree in Industr. Egg or Comp Sci & 5 yrs. exp. in job. ERP & MS DNA exp. Send resume to: Samsung SDS, 15 Corporate Place S., Piscataway, NJ 08854. Attn: Tiffanie

For over 20 years, **Syntel** employees across North America, Europe, and Asia have helped build advanced information technology systems for leading Fortune 500 companies and government organizations to improve their efficiency and competitiveness. Today, Syntel professionals are building rewarding careers by providing solutions in e-business, CRM, Web Design and Data Warehousing.

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- Websphere
- Com/DCom
- Web Architects
- Datawarehousing
- Informix, C or UNIX
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- JAVA, HTML, Active X
- Web Commerce
- SAP/R3, ABAP/4 or FICO or MM & SD
- Oracle Applications & Tools
- Lotus Notes Developer
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- UNIX, C, C++, Visual C++, CORBA, OOD or OOPS
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- Sybase, Access or SQL server
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Senior Systems Analyst sought by a computer consulting & privatized government services company in Denver, Colorado to analyze & transform existing software systems for the government administration to client/server platform systems or web-based systems. Convert existing databases to relational databases. Design & develop new applications & systems including those used for system conversion, create designs, code, test, debug, & implement new software & systems. Maintain new systems & design documentation for new software & systems. The new applications & systems are web-based or client/server-based & incoporate relational database management systems. Serve as project leader as needed. Utilize Natural, Natural Construct, Adabas, EntireX, XML, Oracle, PL/SQL, DB2 & Visual Basic in the design, development & conversion process. Requires 4 years previous experience in designing & developing software & systems utilizing Natural, Natural Construct & Adabas. 8:00AM to 5:00PM. $76,800/year. Respond by resume to James Shimada, Colorado Department of Labor & Employment, Tower II, #400, 1515 Arapahoe St., Denver, CO 80202, & refer to Job order No. CO5092260

F/T Research Software Engineer for NM location. Responsible for performing database design, system configuration data conversion planning, application design and development, documentation development, and application and system training. Configure hardware, software, and network components of GIS and LIDAR systems. Assist clients in developing practical programs that maximize the benefits of their GIS investment. Analyze clients' system operations to determine opportunities for increasing production efficiency. Must have a Master's degree in Computer Science, related field or foreign degree equivalent. Must have 2 yrs. of exp in job offered or a position w/ same duties. Salary: Competitive. Send resumes to: Sheila Seals, Spectrum Mapping, LLC, Ref: 222, 28989 Information Lane, Easton, MD 21601

Software Engineer sought by a network computing storage company in Louisville, CO to work in Brooklyn Park, MN & other unanticipated job sites in the US. Design & develop routing software that is embedded in advanced tape & disk storage devices. For software that runs on a real-time operating system, analyze requirements for embedded software, identify functional specifications, design & implement methodologies. Develop & implement client server applications using network programming in C or C++ language as well as design & coding of networking protocols & topologies such as NetBios, TCP/IP & IPX. Use real-time embedded operating systems such as Vx Works, PSOS or Lynx Os. Requires Master's or foreign equivalent in computer science, computer engineering or related field plus 3 years of relevant experience. (these 3 years can occur prior to or after the Master's is awarded) or Bachelor's degree or foreign equivalent in computer science, computer engineering or related field plus 5 years of relevant experience. 2 years experience as a software engineer using C or C++ and Vx Works, working knowledge of TCP/IP and IPX. $71,808/year. 8:00AM-5:00PM M-F. Respond by resume to Employment Programs, P.O. Box 46547, Denver, CO 80202 & refer to CO5092265

Systems & Applications Test Manager sought out by a computer consulting & privatized government services company in Denver, Colorado to work in Lansing, MI & other unanticipated job sites in the US. Manage testing program to test systems & applications in a client/server environment designed & developed for government administrative procedures. Develop test plans utilizing quality-point methodology, allocate test resources & monitor progress of all testing projects. Oversee identification & correction of software defects & maintain matrix regarding defects. Review & analyze test results & test management reports. Complete earned value analyses, results analyses & trend analyses. Supervise test architects, testers, tests lead & automation specialists. Analyze system test requirements & develop quality assurance plans. Requires 4 years experience in designing & developing software applications in a client/server environment, including at least one year developing & implementing testing methodology utilizing Quality Point methodology. 8:00AM to 5:00PM, M-F, $76,800/year. Respond by resume to Employment Programs, P.O. Box 46547, Denver, CO 80202 & refer to Job order No. CO5092169

Computer Services - Chief Programmer - Rye, NY & locations per assigned. Plan, sched, & direct prep of progs for enterprise sftwr using C++/OO, C, Unix, Win, TCP/IP, J2EE envrons, Comp Security & Oracle; consult with personnel to clarify prog intent, identify problems, suggest changes, and determine extent of programming & coding req'd; apply knowledge of biz processes & enterprise sftwr to dev & enhance billing & customer care solution that integrates acctg, inventory, mktg & finance disciplines. Master's degr w/mktg in Mgmt Info Sys or Hi-Tech, 2 yrs' exp. Send resume to **Recruiting Quantum Horizon, 31 Purchase St, Ste #2, Rye, NY 10580.** Or email prog0904@qhorizon.com.

Software Analyst/Business Development Manager: Duties include gathering requirements, doing business analysis and proposing solutions for IT needs of healthcare and pharmaceutical industry. Will build and lead team to develop and customize software dealing with clinical trials for the pharmaceutical industry.

Requirements: Bachelor of Science degree in Science or Technology Field or equivalent and 1 year coursework in medicine or pharmacology required. Must have 3 yrs. exp. software analyst/business development manager or 3 yrs. exp. in marketing and/or research in the IT field. Since TechNation has clients located in several states and since assignments are of temporary nature, candidates must be willing to move from location to location for assignment duration that varies from 3 mos. to year. Email CV to rtroff@insconc.com. Rona Troff, HR Mgr of TechNation Software Consulting, Inc. or mail to 300 N. Dakota Avenue #505B, Sioux Falls, SD 57104

Programmer/Analyst needed for Software Development, Services & BPO firm located in Burlington, VT. Job duties include: Analyze, develop, code, and implement computer applications for clients located throughout the U.S. Use Perl, Sybase Powerbuilder, MQ Series and Excel VBA to perform tasks. Consult with clients on brokerage processing systems and GLOSS. Applicant must have B.S. degree in Computer Science, Business, Math or Engineering. Applicant must also have 2 yrs. exp. in the job duties described above or in any computer related occupation which must include skills listed above. 40hrs/wk, 8:00am-5:00pm, Mon-Fri. $60,000/yr. Send resumes to Job No. 29404, P.O. Box 488, Montpelier, VT 05601-0488

Programmer Analyst (Vienna, VA) to research, analyze, dsgn, dvlp, implmt, test, document & maintain web services based s/ware applic. w/core focus around SAP's R/3 & related subsystems. Resp for installation & maintenance on SAP internal landscape sys spanning versions 4.5 - 4.7. Req exp in SAP security, BASIS, AAK & functional business process. Utilize all core SAP functional modules, FI/CO/MM/SD/HR, BW & CRM. Microsoft's .NET tech incl ASP.Net, Visual Studio.Net, XML and SOAP. Req Bach in Sci, Mgmt, Comp Sci or Engg/equ + 2 yrs in job duties. Respond to Approva, Silas Matteson, VP, 1953 Gallows Rd., Ste 150, Vienna, VA 22182. E-mail: Silas.Matteson@approva.net. Fax 703-821-0673

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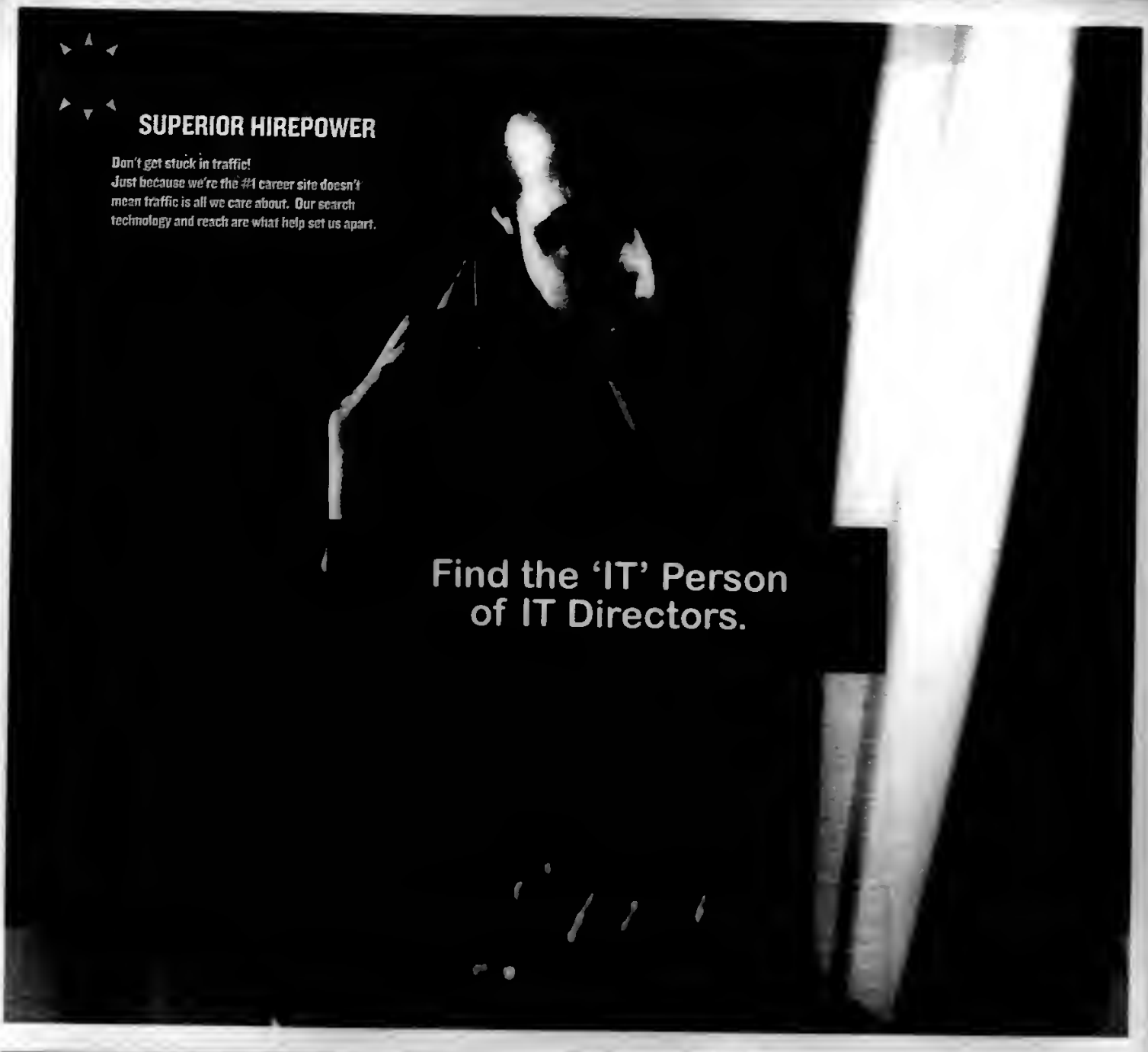
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Programmer Analyst (2 Positions) Provide conceptual data processing solutions to customer business problems in mission critical systems such as customer billing, customer service, marketing info systems & service & materials & financial systems. Provide technical expertise, systems consultation, assistance in coding & informal leadership during the systems development, maintenance & production processes. Bachelor's in Computer Science or a closely related field & 2 yrs exp in a database administration position. Alternatively, employer will accept as qualified an individual w/ 4 yrs of exp in the position offered or 4 yrs of exp in a related database administration position. Exp must include at least 2 yrs exp in Microsoft & Oracle database technologies & UNIX operating systems environments, systems software design & application. Resume to Ali Zaidi, Supra, 5500 Oakbrook Pkwy, Ste 120, Norcross, GA 30093.

Innovative Consulting Solution is seeking IT engineers/ analyst to customize applications using VB, Java, Oracle, ERP, SQL, SAP, WebSphere, EJB etc. Applicants must have BS/MS with exp. Travel is required for some positions. Competitive salary. Apply at info@rscorpusa.com. EOE.

Computer Consultant, Technical Associate wanted by Methods Technology Solutions to develop web-based Oracle Form 3-tier applications using Oracle Workflow. Oracle Form Builder 9i, PL/SQL, JSP. Require minimum BS with experience. Please contact careers@methods-net.com. EOE.

IT Officer: Responsible for proper sizing, installation & day-to-day operations of multiple hardware & software platforms in addition to ensuring proper functioning of the hardware & software. Bachelor's in Computer Science, Bus. Admin. or a related field & 2 yrs exp. in position offered or in a related DB admin. or systems admin position. Resume to Ms. Krueger, Logistics Plus, 1408 Peach St, Erie, PA, 16501.

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Seeking qualified applicants for the following positions in Memphis TN: Senior Business Application Analyst. Act as liaison between technical developers and users/customers. Requirements: Bachelor's degree or equivalent in computer science, math, statistics, business, MIS or related field plus 5 years of experience in analyzing business systems and developing technical automated solutions. Experience with airline scheduling systems development also required. "Master's degree or appropriate field will offset 2 years of general experience." Submit resumes to Matt Coplas, FedEx Corporate Services, 2955 Republican, Memphis, TN 38118. . OE M/F/D/V

eFORCE, Inc. has multiple openings for the following positions at its office in Hayward, CA and unanticipated client sites throughout the U.S.

Programmer Analyst
Software Engineer
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Business Analyst
Software Developers

B.S or M.S. and rel. exp. Travel to unanticipated client sites with travel expenses paid by employer. Please send resume and salary history to: The HR Manager, eFORCE, Inc., 4120 Point Eden Way, Suite 100, Hayward, CA 94545-3703.

Swinsoft, Inc. is hiring all levels of Programmer/Analysts and Software Engineers. Send resumes to 104 Adderley Court, Folsom, CA 95630. May be placed at client sites nationwide.

Web Developers needed. Seeking candidates possessing BS or equiv and/or relevant work exp. Duties include: Design, code, test & debug software applications; Develop administrative tools; Design utility tools. Part of rel. exp. must include 1 yr working w/ XML, ASP and XSL. Mail resume & references to: Carekey Inc., 137 Newbury St., Boston, MA 02116

Systems Architect needed in Miami, Florida to coordinate and lead design and development of customized asset management software applications, including analyze customer business requirements, develop configuration design and functional specifications, develop actual software applications, and implement/test developed applications. Must have Bach. in Comp. Sci., Info. Systems, or equiv. 2 yrs. exp. in software development or systems analysis; knowledge of C/C++, SQL Windows, Oracle, PL/SQL, Java, HTML, XML, and client-server applications. Salary: $81,500/yr. No overtime; salaried position. 9-5, Monday-Friday. Send resume to: Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302. Job Order No. FL-2550587.

Verso Technologies seeks applicants for the position of Telecommunications Engineer in Provo, UT to test switch-based telecommunications protocols including SS7, prepaid applications, ISDN and VOIP. Requirements for position include bachelor's in electronics or communication engineering and 2 yrs exp testing switch-based telecommunications protocols including SS7, prepaid applications, ISDN and VOIP, developing and implementing test plans and utilizing Inet tester Hammer tester, ISUP, TUP, H.323, and SIP protocols. Respond by resume to Rynelle Hoffman, Verso Technologies, 400 Galleria Pkwy #300, Atlanta, GA 30339.

MSYS, Inc.

Systems Analysts. Design, analyze and develop computer and business applications of existing and proposed systems. Knowledge in VB, ASP, JavaScript, SQLServer2000, .NET Technology, Web Design and Development, E-Commerce Services, XML, COM, Crystal reports, with back end databases like SQL Server and Oracle. Need Bachelor degree in Comp. Science or Engg. or related and 2 yrs of exp. Send resume to: HR, MSYS, Inc., 104 Iowa Ln., Suite 201, Cary, NC 27511. E-mail: info@msysinc.com

Programmer Analyst - Analyze reqs, design, test & implement apps using Visual Basic, ODBC, Visual Source safe & SQL Server on Windows based platforms. Reqs. 3 years exp. Employer is a computer consulting company. Relocation req'd to client sites for periods between 6 mos & 2 yrs. M-F 8AM-5PM, 35hrs/wk, $42.00/hr. Send Resume to: Workforce Program Support, PO Box 10869, Tallahassee, FL 32302-0696. Ref#FL-2530736.

Computer Programmer/Analyst. System analysis, design, programming, debugging and testing for software development. Requires a bachelor's degree foreign bachelor's, or equivalent and two years of experience in C++, .NET, JAVA, J2EE, and Oracle. We have positions throughout the US and job will require extensive travel or relocation to the job location depending on duration of the project. Please forward the resumes to: IT Technical Recruiter, Niagara Consulting Group, Inc., Tech-Recruiter@niagaraconsulting.com. Reference Code: WEB0922.

IT Professionals exp'd, sought by a Software Consulting Co., in any of following areas (i) J2EE Architecture, weblogic or iplanet, JavaScript & XML/XSLT (ii) Oracle Forms, Reportwriter & Database Dsgn (iii) Lotus Notes, SDLC, PVCS VM, Tracker relational d/bases & IBM MQ Series (iv) Datawarehousing applics using Informatica, Powercenter, Powerconnect, Cognos Reportnet & Metrics/Framework & (v) C, C++, ASP, VSS, SQL Server, XML & .Net. BS in Comp Sci, Eng or related field. Applicants must be willing to relocate/travel to various unanticipated locs throughout US. Resume to DatamanUSA, Attn: HR, 315A West Lincoln Way, Ste 15, Cheyenne, WY 82001 or email to jobs_wy@datamanusa.com

Systems Administrator. Prov syst admin/support under direct supvsn of Sr Syst Admin of Unix syst on HP 9000 Superdome, RP-8400 Enterprise Class Syst & Sun Firesystems using Veritas clusters, HP MC-Serviceguard, Veritas Netbkup, HP Datapprotector storagetek, tape libraries, Veritas Volume Mgr, HP Logical Volume Mgr (LVM), Sun Disk Suite, EMC Enterprise disaster-ags, HP Hitachi Enterprise Disk-storage. Prov support for ERP apps. Shell & PERL scripting. Reqs Bach degr or equiv in Comp Sci or related field. Min 1 yr exp. 40 hrs/wk, 9am-5pm. Send resume: VP Network Informatic, 1 Lincoln Hwy Ste #10, Edison, NJ 08820.

Programmer/Analyst needed to dsgn, dvlp client/server & Web/Internet applics using Java, C++ (plus STL), JSP, Servlets, Sun One Web Server, XML & XSD, Xerces-J/C++, SQL, DB2 (plus ESQL/C) & Middleware products such as MQ Series & process monitoring/control utilities. Resume to Global Consultants, Attn: Hireme, 8800 Grand Oaks Cir, #100, Tampa, FL 33617.

Programmers & Software Engineers: Analyze, design, develop, test & implement specialized business apps in Business Objects Version 5.1, Web Intelligence & related Business Objects products, RSA Basic SDK, VBA, ASP, Oracle related RDBMS & rel. tools. Travel req. / US Workers only. Send resume to: Sapphire Consulting Company, 365 Pikes Falls Road, Jamaica, VT 05343. EOE.

Senior Programmer. Under supervision perform client application development and support; client requirement collaboration and application design and duties applicable to application front and back ends. Must have Bachelor's degree in Computer Science, Mathematics or related, 1 yr exp in job offered or Systems Analyst, Programmer or related, including experience with Visual Basic, C, Relational Database implementation, and SQL. Send resume to APAC Customer Services, Inc., Attn: Cindy Corbary, 6 Parkway North, Deerfield, IL 60015. EOE/AA. APAC CUSTOMER SERVICES, INC. is not affiliated with APAC, INC., the road paving and construction materials company.

Sys Analyst to analyze data processing probs for appln to elect data proc sys. Analyze user requirements, biz analyses, dev procs & probs to automate sys & review comp sys capabilities, w/s/flow & schedule limitation. D/zn web applns & SDLC including user interface, test & maint using .NET Biztalk Server XML, Rational Rose 2000, UML, VB.NET, ASP.NET, Active X, COM/DCOM/COM+, MTS, VB-Script, Java Script, C/ C++, MS SQL Server, SQL Compare, Jtest, Jverify, VB 6.0 & Card Pac. Perform data model, db base d/zn in ER-Win & MS Visio. Dev tech strategy for BPR, mng projs & POC demos. Cust sup & train users. BS in Math or CS + 3 yrs in job duties OR 3 years in s/w dev. Exp. If no BS - 5 yrs. SDLC exp. Apply: HR, ECS - Code DA, 8744 Main Street, #101, Woodstock, GA 30188 w/ proof of perm. w/k authzn.

Online continuing education provider (Old Saybrook, CT) seeks Software Engineer to dsgn, dvlp & implmnt web-base s/w applictn w/ ColdFusion, Flash, Visual C++ & Java, dsgn & dvlp DB for on-line learning mgmnt system w/ SQL & Crystal Report; test, debug, & upgrade applictns. MS in CS, CompEngg or EE + 1 yr exp. Skills in ColdFusion, Flash, Visual C++, Java & Crystal Report. Send res to CE University, 140 Ferry Rd, Old Saybrook, CT 06475, Attn: Bruce MacMillan.

Programmer Analyst

Design, develop, implement and support client-server & internet based programs for ERP packages, CRM based mgmt. sales force automation and E-commerce. Integrate Technologies in core SAP R/3 includes Electronic Data Interchange, ABAP, Netweaver XML Workflow Business Connector and Web Application Server. Oracle 8i, .NET and Visio, Biztalk, Business Objects, web intelligence, Erwin, Office Master sys & UNIX. Req. Bachelor in Comp. Science or Engg. & 2 yrs of exp. Send Resume to: Sierra Infosys, Inc. 1227 Howe St., Batavia, IL 60510 or E-mail: resume@sierratec.com

Software Engineer to participate in full cycle of software engineering activities and lead team in analysis of requirements, design, development and maintenance of applications and technical specifications; testing, implementation and documentation. Requires: BS in Computer Science, Engineering or closely related field plus 4 yrs experience as Applications Developer of applications for auto industry which must include Web Logic, ClearCase, ClearQuest, Rational Rose, Load Runner, J2EE. Send resume to: IS Human Resources, Attn: JMVL, Crawford Group, 600 Corporate Park Dr., St. Louis, MO 63105.

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Senior Consultant

(Glen Mills, Pennsylvania and other locations throughout the U.S.) Assist managers in developing work plans for components of client engagements. Identify client business strategies, activities and business processes to assess potential opportunities for improvement of information technology; build awareness of technology enablers and potential impact on business strategy and recommending improvements. Map clients' business processes, organization and technology to the new technology solutions; identifying gaps and resolving issues. Participate in the development of implementation plans and elements of plan deliverables for specific components of the strategy, implementing and customizing various systems and applying industry/technical solutions to support key business needs and objectives. Develop new business process and application design within a sub-module. Create designs for complex technical requirements including gap analysis, infrastructure, interfaces, reports, enhancements, and conversions utilizing Oracle Applications (11i) Modules, such as Discrete Manufacturing, Flow Manufacturing, Process Manufacturing/GEMMS, Financials, ROM, WIP, INV, Quality, Purchasing and Planning Modules. Participate in the architecture, functional analysis, design, and configuration of deliverables, the development of tools and methodologies, as well as the development and documentation of standards decisions. Lead the development and execution of test plans, test scripts, cases and acceptance criteria. Design and execute cut-over plans within a single division, department, business process or function and design and lead knowledge transfer plans for sub-teams, including providing training for the end users, post implementation support and troubleshooting issues.

The wage offered is $78,764 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The position requires a Bachelor's degree or equivalent in Computer Science, Engineering (any), Management (any), Business Administration, Information Systems + 4 years of experience in the job offered or 4 years of experience as a Senior Consultant, Consultant, Programmer/Analyst, Business Analyst or Engineer. Employer regards a foreign degree as equivalent to a U.S. Bachelor's degree as determined by an accredited education evaluation service. Related experience must include at least two full life-cycle implementations of Oracle Application modules, including Oracle Process Manufacturing/GEMMS and Oracle Manufacturing, with at least one year of experience functioning as a project lead.

Please send your resume or C.V., referencing Job Order Number **WEB4555841** to the PA CareerLink, 701 Crosby Street, Suite B, Chester, PA 19013. EOE.

IT PROFESSIONALS

Senior Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.) Participate in client business requirements gathering and translate the requirements into technical and functional specifications. Lead the design and development life cycle of specific modules of the application. Reverse Engineer custom application either based on client requirements or interpret and translate current legacy system into an object oriented application design to meet the client's current needs. Develop specific modules of software application in Java or C++. Develop Custom web applications to fit clients need using JSP, Servlet technology. Design and document the various data flow diagrams to help support the underlying application design and translate them into Entity Relationship Diagram. Develop Class Base Model and high-level application component model. Interact closely with senior client and firm management personnel to scope project deadlines. Coordinate cross-team knowledge transfer and ensure that the various modules of the application fit into an optimal object oriented design. Responsible for managing timelines for specific application modules and also help the project management to scope and plan the various phases of the project. Contribute vital methodologies and procedures that need to be executed prior to system integration. User Acceptance and Operational acceptance testing. Provide guidance and mentor junior staff based on industry knowledge and application design experience. Monitor and participate in code reviews and provide valuable feedback on coding practices and optimal object oriented design practice. Provide consulting services to clients in the Consumer Business and Financial services industries.

The wage offered is $78,764 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The minimum requirements are as follows: Bachelor's degree in Engineering (Any), Business Administration, Computer Science or Management Information Systems + 5 years of experience in the job offered or 5 years of experience as a Senior Consultant, Consultant, Programmer/Analyst, Software Engineer or related occupation. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited academic credentials evaluation service. Related experience must also include at least 3 years of object oriented coding expertise utilizing Java, C++ and JSP/Servlets. Related experience must also include web application design and development.

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Senior Consultant

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WAGE: $89,138/year

Hours: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS: Bachelor's degree or equivalent in Computer Science, Engineering (any type), Management (any type), Business Administration or Information Systems + 4 year exp. in the job offered or 4 year exp. as a Senior Consultant, Consultant, or Systems Analyst. Related experience must include configuration and integration with the following SAP modules: FI/CO (Financial and Controlling), GL (General Ledger), AR (Accounts Receivable) and AP (Accounts Payable) and Logistics Invoice Verification, MM (Materials Management) integration and Tax determination and reporting.

Please send your resume, referencing Job Order Number **WEB4555890** to the PA CareerLink, 701 Crosby Street, Suite B, Chester, PA 19013. EOE.

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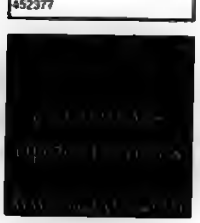

IT PROFESSIONALS

Consultant

(Glen Mills, Pennsylvania and other locations throughout the U.S.) Work under supervision of Managers & Sr Managers to provide consulting services to clients. Will assist with architecture analysis, definition, design & construction of complex Object Oriented J2EE & C++ applications utilizing Rational Unified methodologies such as Rational Rose. Develop business applications. Assist in performing analysis & scope definition for client's business problems. Use RMI (Remote Method Invocation) techniques to develop distributed applications. Assist in deployment of applications on Weblogic 4.5, 5.1 & 6.0 (6.1) & iPlanet application server 6.0 and web server 4.0. Develop financial service applications using open source technologies. Participate in Designing database models and database connectivity techniques from applications. Participate or building awareness of technology enablers which apply to client's business process. Salary is $76,800 per year. The work schedule is Mon - Fri, 8:00 am to 5:00 pm. The position requires Bachelor's or equivalent in Computer Science, Math, Bus. Admin, Engineering (Any Type), Information Systems plus 2 years of experience in the job offered or 2 years of experience as a Programmer Analyst, Business Analyst, Systems Analyst/Architect or Consultant. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited education credential evaluation service. Related experience must include at least one year of experience utilizing Object Oriented J2EE, C++, Rational Rose, Remote Method Invocation (RMI), Weblogic Application Server, iPlanet Application Server.

Please send your resume or C.V. referencing Job Order Number WEB4555221 to the PA CareerLink, 701 Crosby Street, Suite B, Chester, PA 19013-6096. EOE.

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Software Engineer

For Melbourne, FL employment. 40 hrs./wk. 8:00am to 5:00pm. $56,160.00/yr. Requirements: Bachelor's degree in Computer or Electrical Engineering or Computer Science. Experience: in all phases of software development for real-time multi-tasking embedded systems, with C, C++, Visual C++, Windows NT & UNIX; in reverse engineering software applications; in structured analysis & design, applying Object Oriented methodologies to develop class, sequence & state diagrams & use cases; in visual modeling with Rational Rose & Visio; & troubleshooting a multi-faceted computer system. Proficient in software quality assurance practices, including modeling CMM & ISO process initiatives. Duties: Work in a collaborative environment, which interfaces to internal customers & external customers, in the development of locomotive products. Duties include software analysis, design, testing & debugging of real-time embedded software systems. Travel to customer facilities for technical interchange & integration of locomotive products. To apply send resume to Agency for Workforce Innovation, P.O. Box 10869, Tallahassee, FL 32302-0869. Job Order # FL-2555611. EOE.

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SOFTWARE ENGINEER to design, develop, implement, test, support and maintain software systems for various business management applications in a client/server environment using: MQ, MQ Series, MQSI, J2EE, DB2, JMS, SAP, SQL Server 2000, Crystal Report, HTML, DHTML, XML, XSL, EJBS, ASP.NET and Oracle on Windows platform. Require Master's degree in Computer Science or a closely related field with two years of experience in the job offered. Extensive travel on assignments to various client sites within the U.S. is required. Competitive salary offered. Send resume to: Rajender Gaddam, Orpine Enterprises, 1004 Crooked Creek Ct., Mableton, GA 30126. Attn: Job BY

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PROGRAMMER/ANALYST

Design development of software systems using OOD, .NET framework. Familiarity with all phases of software development life cycle; C#, C++, ASP, ASP.NET, ADO.NET, SOAP, PHP, XML, XSD. Experience Using MS visual Studio.NET and MS Visual Studio 6, Database design and development using SQL server My SQL, MS IIS. Knowledge of local area network design, implementation and maintenance. Configuration and programming experience with Cisco routers and Switches, Access Control Lists required. $55,000/year. Bachelor's degree in Computer Science/Engineering. One year of experience in job offered or related field. Please send resumes to: Infoweb Systems Inc., 3435 Asbury Road, Suite 175, Dubuque IA 52002, #563-556-7990 (fax).

Senior Programmer (Bachelors with 2 years experience) - Great Falls, VA. Job entails and requires experience in database administration and in development, testing and implementation of applications using Oracle, Oracle9iAS, JSP, PL/SQL Scripts, Shell Script, Perl, Sun Solaris and NT Server. Relocation within USA possible. Attractive compensation package. Send resume to: Lalitha Chekuri, Great Falls Software Solutions Inc., 1000 Evonshire Lane, Great Falls, VA 22066

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Attacks

Tom Corn, a vice president at Mazu Networks Inc., a Cambridge, Mass.-based vendor of DDoS mitigation technologies. Many of the attacks involve attempts to extort money from the targeted companies, Corn added.

The plight of Bellevue, Wash.-based Authorize.Net is a perfect example. The company, which provides payment processing services to more than 100,000 mainly small to midsize online businesses, was the target of intermittent but "large-scale" DDoS attacks that began on Sept. 15, said David Schwartz, the company's marketing director. The attacks resulted in periods of "brief disruptions" for Authorize.Net's customers, said Schwartz.

The DDoS assault was launched a few days after company officials refused to give in to an extortionist's demand for "a substantial amount of money," Schwartz said. "It was something that was sent to our general mailbox," he said, adding that the FBI and other law enforcement authorities are investigating the incident.

This isn't the first time Authorize.Net has found itself targeted by cyberattackers, but the scope was bigger this time. "We have been attacked in the past, but not on this scale and with such tenacity," Schwartz said.

Following the Money

Jonah Paransky, a senior manager at Cupertino, Calif.-based Symantec, said 16% of the attacks against e-commerce sites that the company analyzed were identified as targeted. In the same period last year, only 4% of the attacks on e-commerce sites were thought to be aimed at specific sites. The increase suggests "that attackers are turning to where the money is," Paransky said.

A jump in the oumber of remotely controlled "bot networks" that are used to launch such attacks is also increasing the seriousness of the threat, Paransky added. Between January and June, the number of bot networks monitored by Symantec rose from well under 2,000 to more than 30,000, he said. Malicious hackers have also been getting faster at exploiting new vulnerabilities.

In addition, the attackers are becoming more sophisticated, Corn said. Increasingly, DDoS attacks are being "dynamically monitored" by their creators and modified on the fly in an effort to get around corporate defenses, he noted.

The combination is creating havoc for IT managers, said Jon Duren, chief technology officer at IdleAire Technologies Corp., a Knoxville, Tenn.-based provider of electrification services at truck stops.

Despite his company's best efforts, its networks keep getting infected with worms, viruses, adware and spyware "that render machines useless," Duren said. Too much time is spent fighting a battle "where the enemy grows increasingly intelligent," he said.

Contributing to the problem is that tool kits for developing and launching attacks are increasingly readily available on the Internet, said David Giambruno, director of strategic infrastructure and security at Pitney Bowes Inc., a $4.5 billion mail and document management firm in Stamford, Conn. The way such tools simplify the process of launching attacks "scares me to death," he said.

Extortion schemes that use attacks like the one against Authorize.Net are becoming more common, with banks among the typical targets, said John Pescatore, an analyst at Gartner Inc. "They are definitely targeted, ransom-type attacks, and there's going to be a lot more of them," he said. **49631**

Key Findings

Symantec's Internet Security Threat Report included the following findings for the period between Jan. 1 and June 30:

- It took an average of 5.8 days for a newly announced vulnerability to be exploited.
- 48 new vulnerabilities were announced per week.
- E-commerce sites received the most targeted attacks.
- Worms compromised 40% of the Fortune 100 companies.

British Police Arrest Man In Cisco Source Code Theft

The Sept. 17 arrest of the person allegedly responsible for stealing internetworking software source code from Cisco Systems Inc. continues a string of recent successes for law enforcement authorities who are looking to catch cybercriminals.

The trend is encouraging, analysts said. But they added that the successes still tend to be limited to well-known cases – not the majority of incidents.

"I'm very happy. The big, high-profile attacks are being solved more quickly these days," said Bruce Schneier, chief technology officer at Counterpane Internet Security Inc. in Mountain View, Calif. "But there's a lot of cybercrime that falls under the radar."

Police in the U.K. arrested a 20-year-old British man in connection with the theft of more than 800MB of Cisco's source code. The theft, involving Version 12.3 of Cisco's IOS software, came to light in May when a Russian Web site briefly posted a portion of the stolen code [QuickLink 47039].

The Cisco arrest is the latest of several recent breakthroughs by law enforcement officials. In July, the FBI charged a Boca Raton, Fla., man with breaking into Acxiom Corp.'s computers and stealing about $7 million worth of data. Last month, a federal grand jury in California indicted a Romanian hacker and five Americans on charges of attempting to steal $10 million in computer equipment by breaking into Ingram Micro Inc.'s online ordering system. And earlier this month, prosecutors in Germany indicted a 19-year-old for allegedly creating the Sasser worm last spring.

"The successes are not based on magical cyber-sleuthing technology but old-fashioned police work" involving tips and informants, Schneier said. He added that much of the success also has to do with law enforcement agencies, such as the FBI's new Cyber Crime Unit, and their increased emphasis on cybercrime.

But more needs to be done to fight cybercriminals, Gartner analyst John Pescatore noted. "Right now, there's a shortage of resources to go after them," he said. "It really is a matter of bigger investments."

– Jaikumar Vijayan

BearingPoint Wins $229M DHS Contract

DAN VERTON

The U.S. Department of Homeland Security last week awarded BearingPoint Inc. a $229 million IT contract to help consolidate and integrate the agency's vast financial resources and assets.

The contract, known as Electronically Managing Enterprise Resources for Government Efficiency and Effectiveness, or eMerge^2, is intended to help the DHS gain control of accounting, acquisitions, grants, asset management and other business operations across the 22 formerly independent agencies that now make up the DHS.

"The terrorists are coming, and they're coming by land, by air, by sea and by cyber [means]," said Darryl Moody, senior vice president responsible for BearingPoint's homeland security practice in McLean, Va. "Therefore, DHS needs the ability to know where its assets and resources are so that it can move and apply them where the highest threat is at that moment."

The contract is a series of individually negotiated task orders, the first one being a $3 million "conference room pilot." The pilot program will enable the DHS to test the complete system designed by BearingPoint using business and homeland security scenarios before deciding to deploy it across the entire agency, Moody said.

The effort is expected to last 60 days, and the entire rollout will likely take two to three years, he said.

While some reports have called the contract an ERP project, Moody said it's actually a "transformation program" that includes a very large ERP component. "ERP [systems] are certainly huge. But this is bigger and more strategic," said Moody, who likened it to a private-sector ERP effort that's tightly linked to supply chain management.

"With the award of this contract, we are one step closer to providing improved visibility into our critical business information," said Andrew Maner, chief financial officer of the DHS, in a prepared statement. **49642**

MORE DHS NEWS

A bill seeks to move the U.S. cybersecurity director from the DHS to the White House

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BPA ABM

FRANK HAYES ■ FRANKLY SPEAKING

Try 'Let's Talk'

WHAT'S THE EASIEST ANSWER to give to a user's request? *No.* It's short, it's to the point, and it ends the conversation. It gets the user out of your face and lets you get back to your real work. Besides, saying no *feels* so good.

What's the second-easiest answer to give a user? *Yes.* It's not as short and sweet as that powerful, muscle-flexing no, but it does close the discussion — whether you're giving the user permission or making a commitment that you can always decide later not to keep.

And what's the *hardest* answer? "Let's talk."

We hate that kind of answer, don't we?

No and yes are the zero and one of business. We IT people like to believe we think in zeros and ones. That's silly — we're capable of much more complex thinking than that. At the very least, we can think in *strings* of zeros and ones.

But we do love that binary simplicity. No and yes are simple.

That's why they're practically useless to us.

Look, the business and technology challenges we face today are way too complex for that. We don't control technology anymore. We can't, because users can and will drag in whatever consumer-grade technology they think will help them do their jobs.

So they'll work from home on unsecured networks. They'll smuggle in Wi-Fi access points. They'll copy truckloads of confidential data to handheld computers and DVD-ROMs and memory sticks.

They'll download and install and come to depend on software they find on the Internet. They'll build their own critical applications in a spreadsheet or database. They'll work up their own service-oriented architectures by constantly accessing outside Web sites for information and functionality they need.

And that's just regular users. That doesn't include the Rube Goldberg contraptions that real power users can string together nowadays using freeware utilities, cell phones on steroids and whatever hit the shelves last week at CompUSA Best Buy and Circuit City.

Users just plain confront a lot of IT today. Which means all of the available IT complexity is what we're stuck with. And we can't crack the complexity with a simple no or yes.

If we say no, users will use this stuff anyway. We can try chasing it down and ripping it out, but they'll just get better at hiding it. And we'll spend all our time playing cops and robbers instead of putting IT to work for the business.

If we say yes — if we give them permission to use whatever high-tech tools they want — we're creating a time bomb. Sure, we can establish a hands-off, support-it-yourself policy for users. That way they're responsible for any IT complications they create, right? But one day, we'll get a help desk call: A whole department now depends on a support-it-yourself application. The guy who whipped up this mission-critical hack job has moved on. The app has just gone south. Fix it — now — or they can't work.

That's what brings us to "Let's talk." And "Tell me what you do and what you need to do it." And "Here are several options, along with what each one will cost. Which do you think might work best?"

Then there's "Here's what I think is wrong with what you're doing and how we might solve those problems." And "Let me repeat your description back to you in my own words, so you can tell me if I've got it right."

Or maybe "You'll have to make some choices — I can explain them, but you'll have to make them." Or "Let's think about what might happen with this technology over the next few years."

Or — and this one really works with users — "I don't understand. Show me."

They're not the easiest answers, or the simplest. But they're the answers we've got to give. 49609

FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

Hey, Whatever Works

Users complain that data they enter into a major application mysteriously disappears, but programmer pilot fish can't find the problem. So he adds an auditing system to record what data is added and when. "After I announced the auditing trail, all the data-disappearance problems suddenly stopped," fish says. Months later, another app shows the same problem. "I didn't have time to add an audit trail, so I just announced a go-live date and never made any changes," says fish. "The problem of the disappearing data never showed up again there, either."

SHARK TANK

Clicki

User of this nonsense manages to delete every name from the member database, and she promptly calls pilot fish in to help. "I was going to save my work, and I accidentally clicked Delete rather than Save," user explains. Usually, a dialog box asks if you're sure you want to do this, fish points out. "Yes, one did," says user, "and I clicked OK." Why? "I always click OK," user says. "I don't have time to read them, so I just click OK."

"so it would take up less room in the Dumpster."

That Must Be It

Understaffed security team at this financial services company sweats it out for two years but manages to keep things virus- and intruder-free. "It is a true team effort. What money we had was spent well, but hard work is the real reason for the success," security pilot fish tells the company's board meeting. That's phenomenal, one board member says. CEO's response: "Well, we have spent a lot of money in that area."

Everybody's Got To Be a Critic

It's the mid-1980s, and the data center where this pilot fish works has just checked out and packed up a communications controller destined for a satellite office. But the next morning, the pallet containing the large cabinet and its overflowing box of cables and manuals is missing. It takes a while, but fish and his cohorts finally track it down. "That pallet of junk? We dumped it into the compactor," maintenance crew chief says proudly.

It Doesn't Work That Way – Yet

It's 1978, and this company's new controller wants improvements to some financial reports. No problem, says programmer pilot fish, who makes the changes. But the controller's still not happy with the reports that have arrived fresh from the computer room's line printer. "That's not what I need," he tells fish. "I need to see the credits printed in red."

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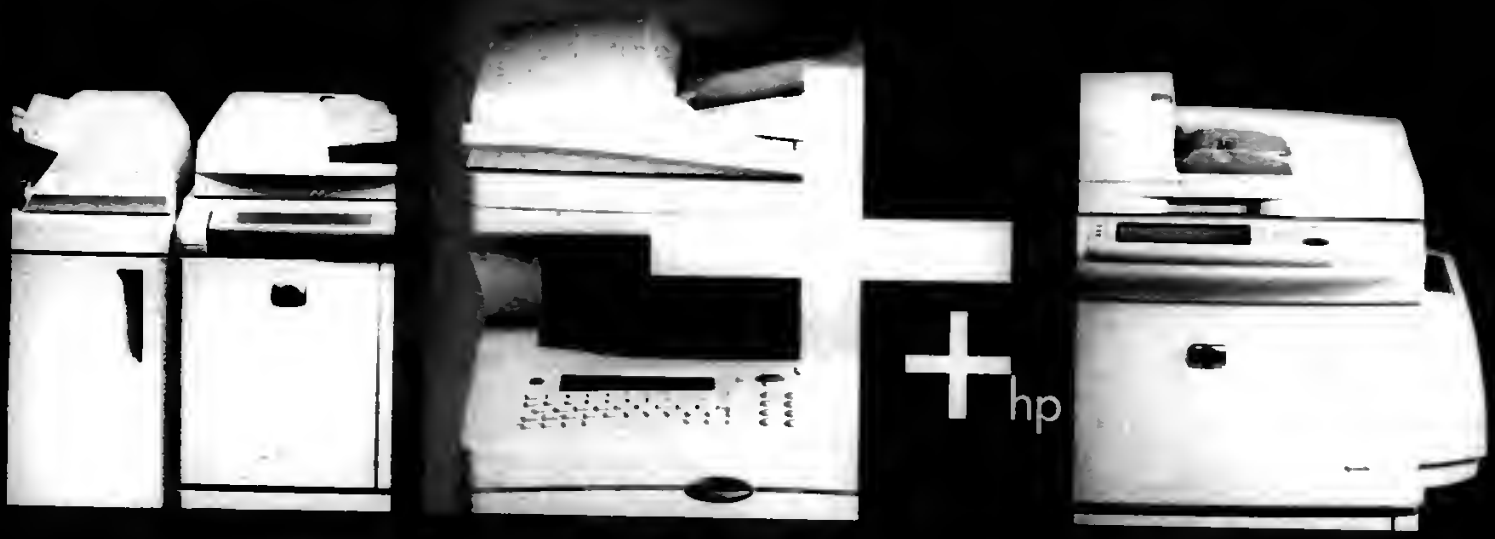

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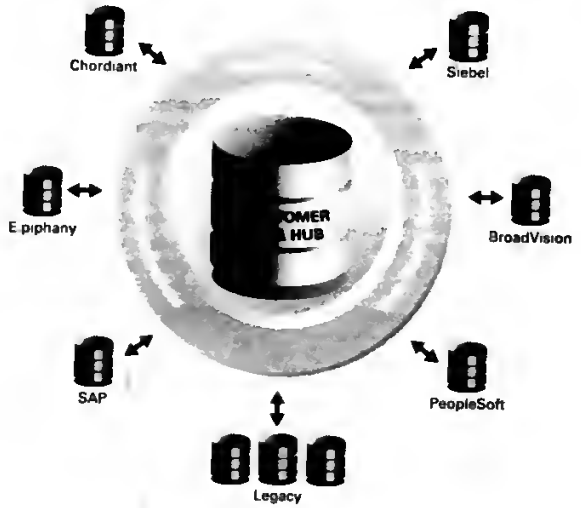

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